



Northwest Training and Testing

Supplement to the Draft

Environmental Impact Statement/Overseas Environmental Impact Statement

December 2014



SUPPLEMENT TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT for NORTHWEST TRAINING AND TESTING ACTIVITIES

Lead Agency: United States Department of the Navy
Cooperating Agency: National Marine Fisheries Service
United States Coast Guard
Title of the Proposed Action: Northwest Training and Testing Activities
Designation: Supplement to the Draft Environmental Impact Statement/Overseas Environmental Impact Statement

Abstract

This is a Supplement to the Draft Northwest Training and Testing (NWTT) Environmental Impact Statement (DEIS)/Overseas EIS (OEIS). Following publication of the Draft EIS/OEIS on 24 January 2014, the United States Department of the Navy (Navy) determined that updated training requirements would result in substantial changes to the Proposed Action. The purpose of this Supplement to the Draft EIS/OEIS is to present these changes to the Proposed Action and significant new information relevant to environmental concerns per 40 Code of Federal Regulations (C.F.R.) 1502.9.

This Supplement includes analysis of new information that has become available since release of the Draft EIS/OEIS: (1) Recently available information has resulted in an update to the type and number of sonobuoys used in the Tracking Exercise (TRACKEX) – Maritime Patrol (Extended Echo Ranging Sonobuoys) activity. This Supplement analyzes the impacts from use of the revised type and number of sonobuoys. (2) An ongoing activity—Maritime Security Operations—was not analyzed in the Draft EIS/OEIS. This Supplement analyzes the impacts associated with this activity. (3) Various non-substantial and minor corrections to the Draft EIS/OEIS have been made. While these corrections would not by themselves require a supplement, in the interest and furtherance of National Environment Policy Act (NEPA), and for full and complete transparency, the Navy is including them in this Supplement to the Draft EIS/OEIS.

This Supplement describes and explains the new information, and provides new or revised sections that supplement the Draft EIS/OEIS released on 24 January 2014.

The Supplement to the Draft EIS/OEIS will be distributed for a 45-day public review period. Comments received during the public review period, as well as all comments received on the Draft EIS/OEIS, will be incorporated into the NWTT Final EIS/OEIS. The Final EIS/OEIS will be published and circulated for a 30-day wait period (no-action period).

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION

Following the release of the Draft Environmental Impact Statement (DEIS)/Overseas EIS (OEIS) on 24 January 2014, the United States (U.S) Department of the Navy (Navy) determined that a Supplement to the Draft EIS/OEIS was warranted for two reasons. First, one activity, known as Tracking Exercise (TRACKEX) – Maritime Patrol (Extended Echo Ranging Sonobuoys), is revised, resulting in a substantial change to the type and number of sonobuoys used. This change in the Proposed Action warrants preparation of a Supplement to the Draft EIS/OEIS under 40 Code of Federal Regulations (C.F.R.) 1502.9(c)(1)(i). Second, new information relevant to air quality emissions of inland water vessel movements associated with Maritime Security Operations (MSO) warrants further consideration and preparation of a Supplement to the Draft EIS/OEIS under 40 C.F.R. 1502.9(c)(1)(ii).

Additionally, various non-substantial and minor corrections have been made to the Draft EIS/OEIS. While these corrections would not by themselves require a supplement, the Navy is including them in this Supplement to the Draft EIS/OEIS.

ES.2 SCOPE AND CONTENT OF THE SUPPLEMENT TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT

This Supplement describes and explains the new information, and provides new or revised sections that supplement the information contained in the Draft EIS/OEIS released on 24 January 2014. Unless specifically included in this Supplement, the activities and the analyses of impacts to resources described in the original Draft EIS/OEIS remain valid, and are included by reference in this Supplement to the Draft EIS/OEIS.

ES.2.1 TRACKING EXERCISE – MARITIME PATROL (EXTENDED ECHO RANGING SONOBUOYS)

Table 2.8-1 (Baseline of Proposed Training Activities) in Chapter 2 (Description of Proposed Action and Alternatives) of the Northwest Training and Testing (NWTT) Draft EIS/OEIS presented the activity in terms of number of activities per year and type and number of sonobuoys proposed for use per year. This change affects activities conducted only in the Offshore Area of the Study Area, at least 12 nautical miles (nm) off the coasts of Washington, Oregon, and California. This Supplement makes the following changes:

Number of activities

- Under the No Action Alternative, number of activities reduced from 54 to 12 per year
- Under Alternatives 1 and 2, number of activities increased from 17 to 24 per year

Type and number of sonobuoys

- Under Alternatives 1 and 2, SSQ-110 explosive Improved Extended Echo Ranging (IEER) sonobuoys is reduced from 150 per year to zero
- Under Alternatives 1 and 2, SSQ-125 non-explosive Multistatic Active Coherent (MAC) sonobuoys is increased from 20 to 720

The changes to the Draft EIS/OEIS Table 2.8-1 for the TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys) are reflected below in Table ES-1.

ES.2.2 MARITIME SECURITY OPERATIONS

MSO is an ongoing activity in the NWTT Study Area that was not previously analyzed. Surface ship crews conduct a suite of MSO events including Transit Protection System (TPS) and Coastal Riverine Group (CRG) training that provide maritime security escorts for Navy vessels such as Fleet Ballistic Missile Submarines (SSBNs). Other MSO events include: Visit, Board, Search, and Seizure exercises; Maritime Interdiction Operations; Force Protection exercises; and Anti Piracy Operations. MSO events have been occurring in the Study Area but were not previously analyzed. They are now added to the training activities proposed under Alternative 1 and Alternative 2 for the NWTT EIS/OEIS.

Of the 286 MSO events the Navy proposes to conduct annually in the Inland Waters of the NWTT Study Area, 226 are TPS events and 60 are CRG training events. The same type and number are proposed under both Alternative 1 and Alternative 2.

ES.3 SUMMARY OF ENVIRONMENTAL EFFECTS

Changes to environmental consequences that might result from the implementation of the Navy's Proposed Action or alternatives have been analyzed in this Supplement to the Draft EIS/OEIS. Resource areas analyzed include sediments and water quality, air quality, marine habitats, marine mammals, sea turtles, birds, marine vegetation, marine invertebrates, fish, cultural resources, American Indian and Alaska Native traditional resources, socioeconomic resources, and public health and safety. The Navy's method of analysis is identical to that used in the Draft EIS/OEIS. The updated changes to impacts and conclusions are summarized in Table ES-2 of this Supplement to the Draft EIS/OEIS.

ES.4 CUMULATIVE IMPACTS

This section includes reassessed cumulative impacts resulting from the updated information explained above. Changes in cumulative impacts occur in the discussion of green house gases and American Indian and Alaska Native Traditional Resources.

As described in the Draft EIS/OEIS, the No Action Alternative, Alternative 1, or Alternative 2 would make an incremental contribution to greenhouse gas emissions. Because of the increased air emissions resulting from the addition of the MSO and the High-Speed Anti-Radiation Missile (HARM) Exercise, the incremental contribution would increase from 0.0016 percent of U.S. 2010 greenhouse gas emissions under the No Action Alternative to 0.0023 percent under Alternative 1 and Alternative 2.

There are no changes in the cumulative impacts to Alaska Native traditional resources, as there are no changes to the proposed activities in the Alaska waters of the NWTT Study Area. Traditional use areas and subsistence resources are known to exist within the NWTT Study Area. There could be cumulative impacts to American Indian traditional resources and access to fishing grounds as identified in tribal treaties from the new training activities in the Inland Waters of the NWTT Study Area. MSO events could temporarily limit tribal access to usual and accustomed grounds and stations in the Inland Waters of the NWTT Study Area. The Navy has an active consultation process in place and will continue to consult on a government to government basis with potentially affected American Indian tribes regarding Navy activities that may have the potential to significantly affect protected tribal treaty rights and resources.

Table ES-1: Baseline and Proposed Training Activities

EIS/OEIS Version	Range Activity	Location	No Action Alternative		Alternative 1		Alternative 2	
			No. of events ¹ (per year)	Ordnance (Number per year)	No. of events (per year)	Ordnance (Number per year)	No. of events (per year)	Ordnance (Number per year)
Anti-Submarine Warfare (ASW)								
January 2014 Draft EIS/OEIS	Tracking Exercise – Maritime Patrol (Extended Echo Ranging Sonobuoys)	Offshore Area	54	150 IEER or SSQ-125 sonobuoys	17	150 IEER and 20 SSQ-125 sonobuoys	17	150 IEER and 20 SSQ-125 sonobuoys
December 2014 Supplement to Draft EIS/OEIS	Tracking Exercise – Maritime Patrol (Extended Echo Ranging Sonobuoys)	Offshore Area	12	149 IEER or SSQ-125 sonobuoys	24	720 SSQ-125 sonobuoys	24	720 SSQ-125 sonobuoys
Other								
January 2014 Draft EIS/OEIS	Maritime Security Operations	NOT INCLUDED IN DRAFT EIS/OEIS						
December 2014 Supplement to Draft EIS/OEIS	Maritime Security Operations	Inland Waters (NAVBASE Kitsap Bangor, Hood Canal, Dabob Bay, Puget Sound, Strait of Juan de Fuca)	Not Previously Analyzed	Not Previously Analyzed	226 TPS 60 CRG	2,800 small-caliber rounds (all blanks)	226 TPS 60 CRG	2,800 small-caliber rounds (all blanks)

Note 1: As used in the EIS/OEIS, the number of events (per year) is not the number of days in which training occurs, but is an actual measurement of the number of individual activities. Multiple events (training and testing) may take place in a single day.

2. EIS = Environmental Impact Statement, IEER = Improved Extended Echo Ranging, NAVBASE = Naval Base, OEIS = Overseas Environmental Impact Statement, TPS = Transit Protection System, CRG = Coastal Riverine Group

Table ES-2: Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2; Extracted from Table ES-2 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Resource Category	Summary of Impacts
Air Quality	<p>Stressors analyzed include criteria air pollutants and hazardous air pollutants.</p> <p>No Action Alternative:</p> <p><u>Criteria Air Pollutants:</u> Reasonably foreseeable emissions of criteria air pollutants in attainment areas from the Navy's actions would not exceed federal ambient air quality standards.</p> <p><u>Hazardous Air Pollutants:</u> Reasonably foreseeable emissions of criteria air pollutants in maintenance areas from the Navy's actions would not exceed applicable federal <i>de minimis</i> levels.</p> <p>The public would not be exposed to substantial concentrations of hazardous air pollutants from the Navy's actions.</p> <p>Alternative 1: The number of individual activities would increase under Alternative 1, as would emissions of the six criteria air pollutants. All of the air emissions sources proposed are mobile sources and do not impact the current attainment status of the Air Quality Control Regions in the Study Area. Therefore, changes to air quality under Alternative 1 would be considered minor and localized; changes to air quality from hazardous air pollutants are not expected to be detectable.</p> <p>Alternative 2: The number of individual activities would increase under Alternative 2, as would emissions of the six criteria air pollutants. All of the air emissions sources proposed are mobile sources and do not impact the current attainment status of the Air Quality Control Regions in the Study Area. Therefore, changes to air quality under Alternative 2 would be considered minor and localized; changes to air quality from hazardous air pollutants are not expected to be detectable.</p>
Marine Mammals	<p>Stressors analyzed include acoustic (sonar and other active acoustic sources; explosive (impulse) sources; weapons firing, launch, and impact noise; vessel noise; and aircraft overflight noise), energy (electromagnetic devices), physical disturbance and strike (vessels, in-water devices, military expended materials, and seafloor devices), entanglement (fiber optic cables and guidance wires, decelerator/parachutes), ingestion (munitions and military expended material other than munitions), and secondary stressors (sediments and water quality).</p> <p>No Action Alternative:</p> <p><u>Acoustic:</u> Pursuant to the Marine Mammal Protection Act (MMPA), the use of sonar and other non-impulse sources, and explosive (impulse) sources may result in Level A harassment or Level B harassment of certain marine mammals; the use of weapons firing, vessel noise, and aircraft noise are not expected to result in Level A or Level B harassment of any marine mammals.</p> <p>Pursuant to the Endangered Species Act (ESA), sonar and other active acoustic sources and explosive (impulse) sources may affect and are likely to adversely affect certain ESA-listed marine mammals; weapons firing, launch, and impact noise; vessel noise, and aircraft overflight noise may affect but are not likely to adversely affect certain ESA-listed marine mammals; and all acoustic sources would have no effect on marine mammal critical habitats.</p> <p><u>Energy:</u> Pursuant to the MMPA, the use of electromagnetic devices is not expected to result in Level A or Level B harassment of any marine mammals.</p> <p>Pursuant to the ESA, the use of electromagnetic devices may affect but is not likely to adversely affect certain ESA-listed marine mammals and would have no effect on marine mammal critical habitats.</p> <p><u>Physical Disturbance and Strike:</u> Pursuant to the MMPA, the use of vessels may result in mortality or Level A harassment of certain marine mammal species but is not expected to result in Level B harassment. The use of in-water devices, military expended materials, and seafloor</p>

Resource Category	Summary of Impacts
	<p>devices are not expected to result in Level A or Level B harassment of any marine mammal.</p> <p>Pursuant to the ESA, vessel use may affect and is likely to adversely affect certain ESA-listed species. The use of in-water devices and military expended materials may affect but is not likely to adversely affect certain marine mammal species. The use of seafloor devices would have no effect on any ESA-listed marine mammal. The use of vessels, in-water devices, military expended materials, and seafloor devices would have no effect on marine mammal critical habitats.</p> <p><u>Entanglement</u>: Pursuant to the MMPA, the use of fiber optic cables, guidance wires, and decelerator/parachutes is not expected to result in mortality or in Level A or Level B harassment of any marine mammal.</p> <p>Pursuant to the ESA, the use of fiber optic cables, guidance wires, and decelerator/parachutes may affect but is not likely to adversely affect certain ESA-listed marine mammals and would have no effect on marine mammal critical habitats.</p> <p><u>Ingestion</u>: Pursuant to the MMPA, the potential for ingestion of all military expended materials is not expected to result in Level A or Level B harassment of any marine mammal.</p> <p>Pursuant to the ESA, the potential for ingestion of all military expended materials may affect, but is not likely to adversely affect certain ESA-listed species.</p> <p><u>Secondary Stressors</u>: Pursuant to the MMPA, secondary stressors are not expected to result in Level A or Level B harassment of any marine mammal.</p> <p>Pursuant to the ESA, secondary stressors may affect but are not likely to adversely affect certain ESA-listed marine mammals and would have no effect on marine mammal critical habitat.</p> <p>Alternative 1: The number of individual impacts under the No Action Alternative may increase for most species under Alternative 1, but the types of impacts, MMPA conclusions, and ESA conclusions would be the same as under the No Action Alternative. Despite the increase, impacts on marine mammals under Alternative 1 are not expected to decrease the overall fitness of any marine mammal population.</p> <p>Alternative 2: The number of individual impacts under the No Action Alternative may increase for most species under Alternative 2 (consisting of Alternative 1 plus additional increases in activity tempo), but the types of impacts, MMPA conclusions, and ESA conclusions would be the same as under the No Action Alternative. Despite the increase, impacts on marine mammals under Alternative 2 are not expected to decrease the overall fitness of any marine mammal population.</p>
Sea Turtles	<p>Stressors analyzed include acoustic (sonar and other active acoustic sources; underwater explosives; weapons firing, launch, and impact noise; vessel and simulated vessel noise, and aircraft noise), energy (electromagnetic devices), physical disturbance and strike (vessels and in-water devices, and military expended materials), entanglement (fiber optic cables, guidance wires, and decelerator/parachutes), ingestion (munitions and military expended materials other than munitions), and secondary (habitat, sediments, and water quality).</p> <p>No Action Alternative:</p> <p><u>Acoustic</u>: Pursuant to the ESA, the use of sonar and other active acoustic sources during training activities would have no effect on ESA-listed leatherback turtles. The use of sonar and other active acoustic sources during testing activities may affect, but is not likely to adversely affect, leatherback turtles. Underwater explosives, and vessel and aircraft noise may affect, but are not likely to adversely affect, leatherback turtles. Weapons firing, launch, and impact noise during training may affect, but is not likely to adversely affect, leatherback turtles. Weapons firing, launch, and impact noise during testing would have no effect on leatherback turtles. The use of acoustic sources would have no effect on leatherback turtle critical habitat.</p> <p><u>Physical Disturbance and Strike</u>: Pursuant to the ESA, physical disturbance and strike from the use of vessels during training and testing activities may affect, and is likely to adversely affect, ESA-listed leatherback turtles. The use of in-water devices, military expended</p>

Resource Category	Summary of Impacts
	<p>materials, and seafloor devices may affect, but is not likely to adversely affect, ESA-listed sea turtles. Physical disturbance and strike stressors would have no effect on leatherback turtle critical habitat.</p> <p><u>Energy</u>: Pursuant to the ESA, the use of energy sources during training and testing activities would have no effect on ESA-listed leatherback turtles. The use of energy sources would have no effect on leatherback turtle critical habitat.</p> <p><u>Entanglement</u>: Pursuant to the ESA, entanglement from the use of fiber optic cables, guidance wires, and decelerator/parachutes during training and testing activities may affect, but is not likely to adversely affect, ESA-listed leatherback turtles. Entanglement stressors would have no effect on leatherback turtle critical habitat.</p> <p><u>Ingestion</u>: Pursuant to the ESA, ingestion hazards the use of munitions during training and testing activities would not affect ESA-listed leatherback turtles. The expenditure of military expended materials other than munitions during training and testing activities may affect, but is not likely to adversely affect, ESA-listed leatherback turtles. Ingestion stressors would have no effect on leatherback turtle critical habitat.</p> <p><u>Secondary Stressors</u>: Pursuant to the ESA, secondary stressors may affect but are not likely to adversely affect ESA-listed sea turtles because changes in sediment, water, and air quality are not likely to be detectable, and no detectable changes in growth, survival, propagation, or population levels of sea turtles are anticipated. Secondary stressors would have no effect on leatherback turtle critical habitat.</p> <p>Alternative 1:</p> <p><u>Acoustic</u>: Pursuant to the ESA, the use of sonar and other active acoustic sources during training activities may affect, and is likely to adversely affect, leatherback turtles.</p> <p>Despite the increase in activities, all other impacts and ESA conclusions would be the same as under the No Action Alternative. Impacts on sea turtles under Alternative 1 are not expected to decrease the overall fitness of any sea turtle population.</p> <p>Alternative 2:</p> <p><u>Acoustic</u>: Pursuant to the ESA, the use of sonar and other active acoustic sources during training activities may affect, and is likely to adversely affect, leatherback turtles.</p> <p>Despite the increase in activities, all other impacts and ESA conclusions would be the same as under the No Action Alternative. Impacts on sea turtles under Alternative 2 are not expected to decrease the overall fitness of any sea turtle population.</p>
American Indian and Alaska Native Traditional Resources	<p>Stressors analyzed include accessibility (limiting access to the ocean), airborne acoustics, physical disturbance and interactions (activities including vessel and in-water devices and deposition of military expended materials) and secondary impacts from changes to marine resources.</p> <p>No Action Alternative:</p> <p>Impacts on American Indian protected tribal resources and other traditional resources would occur because inaccessibility to areas of co-use such as usual and accustomed fishing grounds, even though of short duration may prevent fishing in limited seasons. Vessel and in-water device strikes could create damage or loss to American Indian fishing equipment reducing fishing opportunity and increasing the amount of effort and resources required to catch the same amount of fish. Marine species' population levels would not be altered to such an extent that tribes could no longer find their target species. There would be no impacts to Alaska Native protected tribal resources or other traditional resources.</p> <p>Alternative 1: The number of most activities under the No Action Alternative may increase under Alternative 1, but the types of impacts would be the same as under the No Action Alternative. Because of the increase in activity under Alternative 1, there could be an increased probability of disrupting access to co-use areas, resulting in impacts to American Indian protected tribal resources.</p>

Resource Category	Summary of Impacts
	<p>Alternative 2: The number of most activities under the No Action Alternative may increase under Alternative 2 (consisting of Alternative 1 plus additional increases in activity tempo), but the types of impacts would be the same as under the No Action Alternative. Because of the increase in activity under Alternative 2, there could be an increased probability of disrupting access to co-use areas, resulting in impacts to American Indian protected tribal resources.</p>
Socioeconomic Resources	<p>Stressors analyzed include accessibility (limiting access to the ocean and the air), physical disturbance and interactions (aircraft, vessels and in-water devices, and military expended materials), airborne acoustics (weapons firing, aircraft and vessel noise), and secondary impacts from changes to the availability of marine resources.</p> <p>No Action Alternative:</p> <p>Impacts on socioeconomic resources are not expected because:</p> <ul style="list-style-type: none"> • Inaccessibility to areas of co-use would be localized and temporary. • The Navy's strict standard operating procedures would minimize physical disturbance and strikes. • Most airborne activities would occur well out to sea far from tourism and recreation locations. • Impacts to marine species are not expected. <p>Further, there are no disproportionately high impacts or adverse effects on any low-income or minority populations.</p> <p>Alternative 1: The number of most activities under the No Action Alternative may increase under Alternative 1, but the types of impacts would be the same as under the No Action Alternative. Despite the increase in activity under Alternative 1, impacts to socioeconomic resources are not expected.</p> <p>Alternative 2: The number of most activities under the No Action Alternative may increase under Alternative 2 (consisting of Alternative 1 plus additional increases in activity tempo), but the types of impacts would be the same as under the No Action Alternative. Despite the increase in activity under Alternative 2, impacts to socioeconomic resources are not expected.</p>

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REFERENCES CITED

U.S. Department of the Navy. (2014). Northwest Training and Testing (NWTT) Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS). Prepared by Naval Facilities Engineering Command Northwest.

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1 INTRODUCTION TO THE SUPPLEMENT

On 24 January 2014, the United States (U.S.) Department of the Navy (Navy) released to the public a Draft Environmental Impact Statement (EIS)/Overseas EIS (OEIS) to conduct training and testing activities in the Northwest Training and Testing (NWTT) Study Area (U.S. Department of the Navy 2014). A Notice of Availability (NOA) for the Northwest Training and Testing Draft EIS/OEIS was published in the Federal Register (FR) on 24 January 2014 (79 FR 4158). The Draft EIS/OEIS described the Proposed Action, Purpose and Need, alternatives considered, the existing environment, and environmental consequences (including short-term, long-term, and cumulative impacts) of training and testing in the Study Area.

Following the release of the Draft EIS/OEIS, the Navy determined that a Supplement to the Draft EIS/OEIS is warranted for two reasons. First, one activity, known as Tracking Exercises (TRACKEXs)–Maritime Patrol (Extended Echo Ranging Sonobuoys), is revised, resulting in a substantial change to the type and number of sonobuoys used. This change in the proposed action warrants preparation of a Supplement to the Draft EIS/OEIS under 40 Code of Federal Regulations (C.F.R.) 1502.9(c)(1)(i). Second, new information relevant to air quality emissions of inland water vessel movements associated with Maritime Security Operations (MSO) warrants further consideration and preparation of a Supplement to the Draft EIS/OEIS under 40 C.F.R. 1502.9(c)(1)(ii). MSO is an ongoing activity in the NWTT Study Area that was not previously analyzed.

The overall Purpose and Need for the Proposed Action has not changed. The purpose of this Supplement to the Draft EIS/OEIS is to present the changes to the Proposed Action and their impacts on the environment, and to allow for public review and comment on these changes.

In addition to the changes that warranted preparation of this Supplement (i.e., had the potential to alter the impact analysis), the Navy is making various non-substantial and minor changes. While these corrections would not by themselves require a supplement, in the interest and furtherance of the National Environmental Policy Act (NEPA), and for full and complete transparency, the Navy is including them in this Supplement to the Draft EIS/OEIS.

This Supplement describes and explains the new information, and provides new or revised sections that supplement the information contained in the Draft EIS/OEIS released on 24 January 2014. Unless specifically included in this Supplement, the activities and the analyses of impacts to resources described in the original Draft EIS/OEIS remain valid, and are included by reference in this Supplement to the Draft EIS/OEIS.

The Supplement to the Draft EIS/OEIS will be distributed for a 45-day public review period. Comments received during the public review period, as well as all comments received on the Draft EIS/OEIS, will be incorporated into the NWTT Final EIS/OEIS.

1.1 SCOPE AND CONTENT OF THIS SUPPLEMENT

This Supplement to the Draft EIS/OEIS includes analysis of changes involving two training activities; TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys), and MSO. Additionally, the following minor changes were analyzed: clarification of the NWTT Study Area boundary; clarification of size calculation of an Inland Waters operating area; inclusion of High-Speed Anti-Radiation Missile (HARM) Exercise; correction to Submarine Mine Exercise; revision to Personnel Insertion/Extraction – Non-Submersible activity; and revision to Search and Rescue activity.

Chapter 2 of this Supplement describes the proposed new and changed activities. Chapter 3 presents the analysis of impacts that have changed from the Draft EIS/OEIS as a result of the changes in the proposed activities. Chapter 4 describes the changes in cumulative impacts, Chapter 5 describes changes to mitigation measures, and Chapter 6 describes the changes to energy requirements. Appendix A includes the descriptions of the HARM Exercise and the MSO activity, and Appendix F presents revised training activities matrices.

Only those analyses and conclusions that changed as a result of the revised training activities are included in this Supplement. All other information contained in the Draft EIS/OEIS remains valid and is incorporated by reference.

REFERENCES CITED

U.S. Department of the Navy. (2014). Northwest Training and Testing (NWTT) Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS). Prepared by Naval Facilities Engineering Command Northwest.

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2 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This chapter includes the descriptions of the substantive changes and the non-substantive changes.

2.1 TRACKING EXERCISE – MARITIME PATROL (EXTENDED ECHO RANGING SONOBUOYS)

The changes described here affect activities conducted only in the Offshore Area of the Northwest Training and Testing (NWTT) Study Area, at least 12 nautical miles (nm) off the coasts of Washington, Oregon, and California.

2.1.1 CHANGE TO THE NO ACTION ALTERNATIVE

In Chapter 2 (Description of Proposed Action and Alternatives) of the NWTT Draft Environmental Impact Statement (EIS)/Overseas EIS (OEIS), the annual number of events¹ under the No Action Alternative was incorrectly stated as 54 and the number of sonobuoys as 150 due to a transcription error. The correct number of events is 12 and 149 of either Improved Extended Echo Ranging (IEER) or SSQ-125 Multistatic Active Coherent (MAC) sonobuoys.

2.1.2 CHANGE TO ALTERNATIVE 1 AND ALTERNATIVE 2

The Navy is transitioning from the SSQ-110 IEER sonobuoys to the SSQ-125 MAC sonobuoys. Based on updated acquisition schedules of the P-8 aircraft, establishment of additional P-8 squadrons in the Pacific Northwest, and revised Anti-Submarine Warfare squadron training proficiency requirements, the Navy needs to plan for an increase in the number of maritime patrol activities from 17 to 24 annually and significantly increase SSQ-125 sonobuoy use from 20 to 720 per year. Also, sonobuoy technology is evolving and the SSQ-110 sonobuoys are being phased out due to improved capabilities in the SSQ-125 MAC sonobuoys. Therefore, the SSQ-110 sonobuoys are no longer proposed for training activities under Alternative 1 or Alternative 2. The changes to the Draft EIS/OEIS Table 2.8-1 for the Tracking Exercise (TRACKEX) – Maritime Patrol (Extended Echo Ranging Sonobuoys) are reflected below in Table 2-1.

2.2 MARITIME SECURITY OPERATIONS

Maritime Security Operations (MSO) is an ongoing activity in the NWTT Study Area that was not previously analyzed. It has been added to the training activities proposed under Alternative 1 and Alternative 2 for the NWTT EIS/OEIS and is now analyzed in this Supplement to the Draft EIS/OEIS. MSO activities are a suite of events including Transit Protection System (TPS) and Coastal Riverine Group (CRG) training that provide maritime security escorts for Navy vessels such as Fleet Ballistic Missile Submarines (SSBNs). Other MSO events include: Visit, Board, Search, and Seizure exercises; Maritime Interdiction Operations; Force Protection exercises; and Anti Piracy Operations. See Appendix A (Navy Activities Descriptions) for a full description of MSO.

MSO also includes an activity that was described in the Draft EIS/OEIS as Gunnery Exercise (Surface-to-Surface) – Boat (GUNEX [S-S] – Boat). That activity is now included in this Supplement under MSO, where it is more appropriate, and the GUNEX (S-S) is removed. The changes to the Draft EIS/OEIS Table 2.8-1 for Maritime Security Operations are shown below in Table 2-1.

¹ As used in the EIS/OEIS, the number of events (per year) is not the number of days in which training occurs, but is an actual measurement of the number of individual activities. Multiple events (training and testing) may take place in a single day.

Table 2-1: Change to Baseline and Proposed Training Activities

EIS/OEIS Version	Range Activity	Location	No Action Alternative		Alternative 1		Alternative 2	
			No. of events ¹ (per year)	Ordnance (Number per year)	No. of events (per year)	Ordnance (Number per year)	No. of events (per year)	Ordnance (Number per year)
Anti-Surface Warfare (ASUW)								
January 2014 Draft EIS/OEIS	Gunnery Exercise (Surface-to-Surface) – Boat (GUNEX [S-S] – Boat)	Inland Waters (Crescent Harbor)	0	None	4	1,500 small-caliber, all blanks	4	1,500 small-caliber, all blanks
December 2014 Supplement to Draft EIS/OEIS	Gunnery Exercise (Surface-to-Surface) – Boat (GUNEX [S-S] – Boat)	REMOVED FROM THE DRAFT EIS/OEIS AND MOVED TO SUPPLEMENT UNDER MARITIME SECURITY OPERATIONS						
Anti-Submarine Warfare (ASW)								
January 2014 Draft EIS/OEIS	Tracking Exercise – Maritime Patrol (Extended Echo Ranging Sonobuoys)	Offshore Area	54	150 IEER or SSQ-125 sonobuoys	17	150 IEER and 20 SSQ-125 sonobuoys	17	150 IEER and 20 SSQ-125 sonobuoys
December 2014 Supplement to Draft EIS/OEIS	Tracking Exercise – Maritime Patrol (Extended Echo Ranging Sonobuoys)	Offshore Area	12	149 IEER or SSQ-125 sonobuoys	24	720 SSQ-125 sonobuoys	24	720 SSQ-125 sonobuoys
Other								
January 2014 Draft EIS/OEIS	Maritime Security Operations	NOT INCLUDED IN THE DRAFT EIS/OEIS						
December 2014 Supplement to Draft EIS/OEIS	Maritime Security Operations	Inland Waters (NAVBASE Kitsap Bangor, Hood Canal, Dabob Bay, Puget Sound, Strait of Juan de Fuca)	Not Previously Analyzed	Not Previously Analyzed	226 TPS 60 CRG	1,800 small-caliber rounds (all blanks)	226 TPS 60 CRG	1,800 small-caliber rounds (all blanks)

Note 1: As used in the EIS/OEIS, the number of events (per year) is not the number of days in which training occurs, but is an actual measurement of the number of individual activities. Multiple events (training and testing) may take place in a single day. 2. EIS = Environmental Impact Statement, IEER = Improved Extended Echo Ranging, OEIS = Overseas Environmental Impact Statement, TPS = Transit Protection System, CRG = Coastal Riverine Group

Section 2.4.1 of the Draft EIS/OEIS included a table (Table 2.4-1) of proposed training activities, including the name and a brief description of each of the proposed training activities. Table 2-2 below shows the change that will be reflected in Table 2.4-1 of the Final EIS/OEIS. The Gunnery Exercise (GUNEX) Surface-To-Surface (S-S) activity is removed from Table 2.4-1 and no change is required for the TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys) activity.

Table 2-2: Change to Representative Training Activities; Extracted from Table 2.4-1 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Activity Name	Activity Description
Other Training Activities	
Maritime Security Operations	Surface ship crews conduct a suite of Maritime Security Operations (MSO) events including maritime security escorts for Navy vessels such as Fleet Ballistic Missile Submarines (SSBNs); Visit, Board, Search, and Seizure; Maritime Interdiction Operations; Force Protection; and Anti-Piracy Operations.

Section 2.7.1.6 of the Draft EIS/OEIS provides a summary of Other Training Activities proposed under Alternative 1 and Alternative 2. The following new bullet under Section 2.7.1.6 reflects the addition of Maritime Security Operations:

- Under Maritime Security Operations, the Navy provides and trains for maritime security escorts for Navy vessels such as Fleet Ballistic Missile Submarines. These activities could occur as often as 286 times per year.

There are no other changes to Chapter 2 resulting from the changes to the scope of activity.

2.3 OTHER CORRECTIONS AND CLARIFICATIONS TO THE PROPOSED ACTION

Additionally, various non-substantial corrections are made to the Draft EIS/OEIS. Some of the changes involve revised numbers of activities to the No Action Alternative. These were all omissions to how the activities were counted, but they involve ongoing activities that have been analyzed previously (U.S. Department of the Navy 2010). Changes to the action alternatives reflect changes to training requirements. While these corrections and clarifications would not by themselves require a Supplement, in the interest and furtherance of NEPA, and for clarity, the Navy is including them in this Supplement to the Draft EIS/OEIS. Additional changes may yet be made to the Final EIS/OEIS based on public comments, agency consultation, and government-to-government consultation with affected federally-recognized tribes and nations.

2.3.1 CLARIFICATION OF THE NORTHWEST TRAINING AND TESTING STUDY AREA BOUNDARY

In the Draft EIS/OEIS, the eastern boundary of the Offshore Area of the NWTT Study Area was defined as the coastline for the entire Washington state. Following the Draft EIS/OEIS, the Navy reduced the Offshore Area by revising the eastern boundary to 12 nautical miles (nm) off the coast along the southern part of the state of Washington. Figure 2-1 shows the updated Study Area boundary.

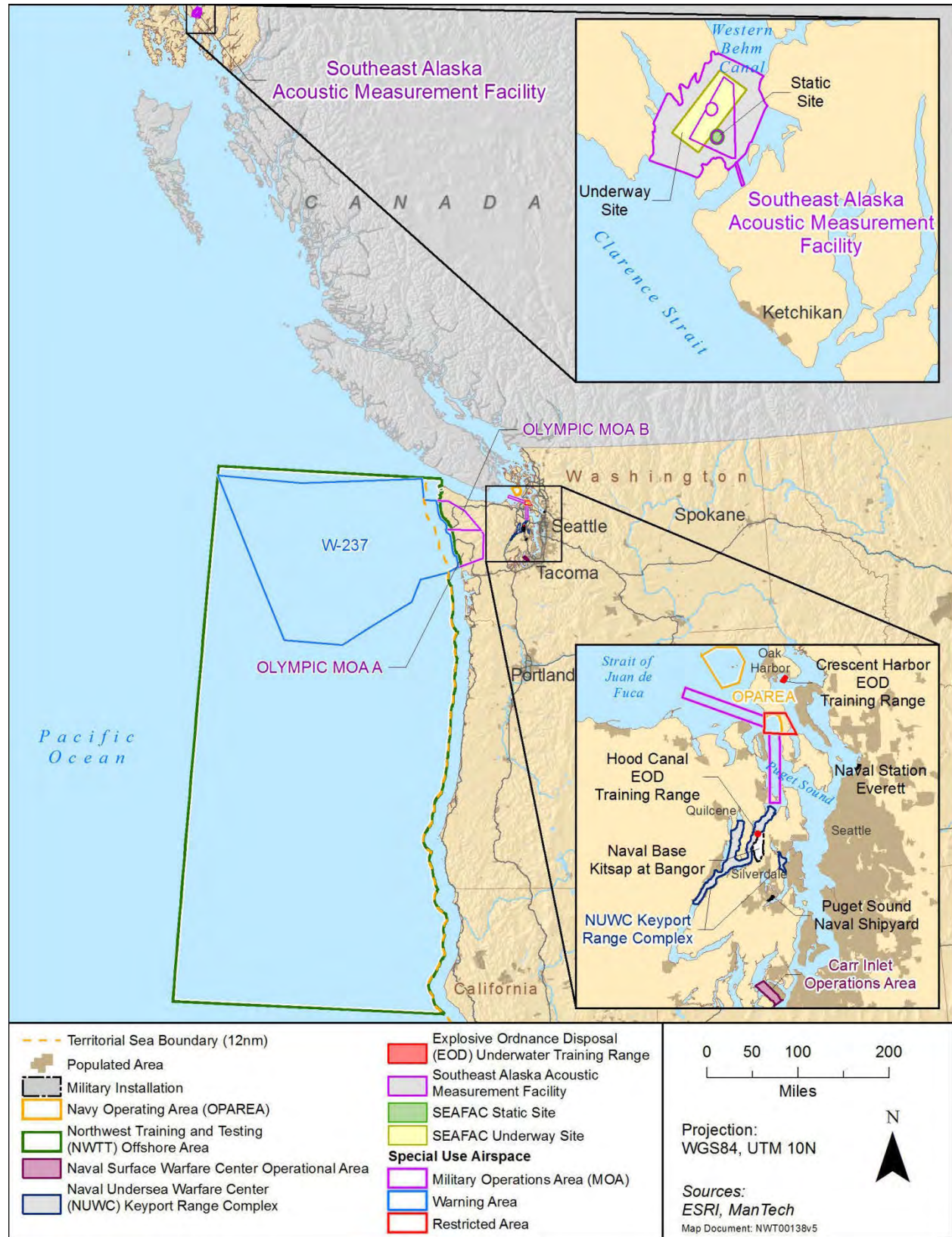


Figure 2-1: Northwest Training and Testing Study Area

In Section 2.1.1 (Description of the Offshore Area), the description has been changed to: “The Offshore Area of the Study Area includes air, surface, and subsurface operating areas extending generally west from the coastline of Washington, Oregon, and Northern California for a distance of approximately 250 nm into international waters. The eastern boundary of the Offshore Area lies 12 nm off the coastline for most of the Study Area, including southern Washington, Oregon, and Northern California. Under the airspace of W-237 and the Olympic Military Operations Area (MOA), the eastern boundary abuts the coastline except for the Quinault Range Site.”

Also, in Section 2.1.1.2 (Sea and Undersea Space), the description of the Offshore Area has been changed to: “The Offshore Area excludes that portion of offshore waters from the coastline of southern Washington (south of the Olympic MOA), Oregon, and Northern California out to 12 nm at sea.”

All figures in the EIS/OEIS that include the Offshore Area boundary have been revised to reflect this change. No other changes to the Study Area or to the figures in the EIS/OEIS have been made.

2.3.2 CLARIFICATION OF AREA CALCULATION

In Section 2.1.2.3.4 (Navy Surface Operations Areas) of the Draft EIS/OEIS, the combined area of the Navy 3 and Navy 7 operating areas (OPAREAs) was presented as 56 nm². For accuracy, this value has been updated to 61 nm², and the last sentence was revised to clarify that the calculated area included both OPAREAs.

2.3.3 INCLUSION OF HIGH-SPEED ANTI-RADIATION MISSILE EXERCISE

The High-Speed Anti-Radiation Missile (HARM) Exercise (Non-firing) is now added to the training activities proposed for the NWTT EIS/OEIS. This is an ongoing training activity conducted in the NWTT Study Area that was previously analyzed under NEPA (U.S. Department of the Navy 2010), but was mistakenly omitted from the NWTT Draft EIS/OEIS. This activity includes 1,740 annual events that are continuing as currently conducted under each of the alternatives. Table 2.4-1 of the Draft EIS/OEIS has been revised to reflect the addition of the HARM Exercise. This addition is shown below in Table 2-3.

Table 2-3: Representative Training Activities; Extracted from Table 2.4-1 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Activity Name	Activity Description
Other Training Activities	
High-Speed Anti-Radiation Missile (HARM) Exercise (Non-firing)	Fixed-wing aircrews simulate firing HARM missiles, using captive air training missiles against surface targets. All missile firings are simulated; no actual missiles are fired.

Table 2.8-1 of the Draft EIS/OEIS is revised to reflect this new addition, which is shown below in Table 2-4. Appendix A of the Draft EIS/OEIS has also been revised to include the description of this activity. This addition can be found in Appendix A of this Supplement to the Draft EIS/OEIS.

2.3.4 SUBMARINE MINE EXERCISE

In the Draft EIS/OEIS, the number of annual events of this exercise was listed as zero for the No Action Alternative. This was an error and should have shown seven annual events. This is an ongoing training activity that was previously analyzed under NEPA (U.S. Department of the Navy 2010), but was mistakenly omitted from the Draft EIS/OEIS. No correction is needed to either action alternative.

2.3.5 PERSONNEL INSERTION/EXTRACTION – NON-SUBMERSIBLE

In this activity, the number of annual events is reduced to reflect changes in training requirements. Alternative 1 and Alternative 2 were reduced from 120 to 10 activities. Also, under “Location,” Restricted Area 6701 (R6701) was added to identify this location where the activities currently take place as previously analyzed (U.S. Department of the Navy 2010) and currently analyzed in the NWTT Draft EIS/OEIS.

2.3.6 SEARCH AND RESCUE

In this activity, the number of annual events is reduced to reflect a correction in the No Action Alternative and adjustments to the action alternatives per updated requirements. The No Action Alternative was reduced from 180 to 72 activities, and Alternative 1 and Alternative 2 were reduced from 180 to 100 activities. Also, under “Location,” Olympic MOA was removed to correctly identify locations where the activities could take place.

Table 2-4: Other Modifications to Baseline and Proposed Training Activities

EIS/OEIS Version	Range Activity	Location	No Action Alternative		Alternative 1		Alternative 2	
			No. of events (per year)	Ordnance (Number per year)	No. of events (per year)	Ordnance (Number per year)	No. of events (per year)	Ordnance (Number per year)
Anti-Surface Warfare (ASUW)								
January 2014 Draft EIS/OEIS	High-Speed Anti-Radiation Missile (HARM) Exercise (Non-firing)	NOT INCLUDED						
December 2014 Supplement to Draft EIS/OEIS	High-Speed Anti-Radiation Missile (HARM) Exercise (Non-firing)	Offshore Area (W-237)	1,740	All non-firing Captive Air Training Missiles	1,740	All non-firing Captive Air Training Missiles	1,740	All non-firing Captive Air Training Missiles
Mine Warfare (MIW)								
January 2014 Draft EIS/OEIS	Submarine Mine Exercise	Offshore Area	Not Previously Analyzed	None	8	None	8	None
December 2014 Supplement to Draft EIS/OEIS	Submarine Mine Exercise	Offshore Area	7	None	8	None	8	None
Naval Special Warfare (NSW)								
January 2014 Draft EIS/OEIS	Personnel Insertion/Extraction – Non-Submersible	Inland Waters (Crescent Harbor)	120	None	120	None	120	None
December 2014 Supplement to Draft EIS/OEIS	Personnel Insertion/Extraction – Non-Submersible	Inland Waters (Crescent Harbor, R6701)	120	None	10	None	10	None
Other								
January 2014 Draft EIS/OEIS	Search and Rescue	Crescent Harbor, Navy 7 Olympic MOA	180	None	180	None	180	None
December 2014 Supplement to Draft EIS/OEIS	Search and Rescue	Crescent Harbor, Navy 7	72	None	100	None	100	None

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REFERENCES CITED

U.S. Department of the Navy. (2010). Northwest Training Range Complex Environmental Impact Statement/Overseas Environmental Impact Statement. Prepared by U.S. Pacific Fleet.

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3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The changes to the Proposed Action described in Chapter 2 of this Supplement result in changes to the environmental consequences previously discussed in the Northwest Training and Testing (NWT) Draft Environmental Impact Statement (EIS)/Overseas EIS (OEIS). Those changes to the environmental consequences will be discussed here in Chapter 3 of this Supplement to the Draft EIS/OEIS. The baseline environment of the NWT Study Area is not changing.

3.0 CHANGES TO SECTION 3.0.5 (OVERALL APPROACH TO ANALYSIS)

In Section 3.0.5 (Overall Approach to Analysis) of the Draft EIS/OEIS, stressors are identified and described; these stressors form the basis for the analysis of impacts to environmental resources. The changes in the Proposed Action described in Chapter 2 of this Supplement to the Draft EIS/OEIS result in changes to impacts on resources. These changes are identified below in terms of stressors:

- Air Quality Stressors – criteria pollutants
 - Maritime Security Operations (MSO) result in increased vessel air emissions.
 - The changes to the Tracking Exercise (TRACKEX) – Maritime Patrol (Extended Echo Ranging Sonobuoys) activities result in changes to the total air emissions from aircraft.
 - The inclusion of the ongoing High-Speed Anti-Radiation Missile Exercise events results in an increase in emissions analyzed in the Offshore Area across all alternatives.
 - The reduction in Personnel Insertion/Extraction – Non-submersible events results in reduced air emissions in the Inland Waters across all alternatives.
 - The reduction in Search and Rescue events results in reduced air emissions in the Inland Waters across all alternatives.
 - Other small corrections to air quality calculations are included in this Supplement.
- Acoustic Stressors – sonar and other active sources, explosives, and vessel noise
 - MSO activities contribute additional vessel noise to the existing ambient environment within Puget Sound.
 - The changes to the TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys) activities result in an increased number and change in the type of sonobuoys that would be used. This will result in an increase in sonar and other active sources used in Alt 1 and 2, and a reduction in explosive sources used in Alt 1 and 2.
- Physical Disturbance and Strike Stressors – aircraft, vessels, in-water devices, and military expended materials
 - MSO activities increase the overall level of vessel movements analyzed in this Supplement, increasing the associated risk of vessel strike of marine life within Puget Sound.
 - The changes to the TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys) activities result in changes in the number of aircraft flights and an overall increase in the number of in-water devices and military expended materials (sonobuoys), increasing the associated risk of strike to birds and marine species.
 - The inclusion of the ongoing HARM Exercise events results in an increase in aircraft flights analyzed in the Offshore Area across all alternatives, increasing the associated risk of strike to birds.
 - The reduction in Personnel Insertion/Extraction – Non-submersible events results in reduced aircraft flights in the Inland Waters across all alternatives, reducing the associated risk of strike to birds.

- The reduction in Search and Rescue events results in reduced aircraft flights in the Inland Waters across all alternatives, reducing the associated risk of strike to birds.
- Entanglement Stressors – decelerator/parachutes
 - The changes to the TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys) activities result in an overall increase in sonobuoys and their associated decelerator parachutes.
- Access Stressors – vessel movements
 - MSO activities and associated vessel movements and their moving security zone could result in temporary reduction of access by tribes to usual and accustomed fishing grounds and stations during these activities in the Inland Waters.

Each of these stressors will be described in further detail in the following sections.

3.0.1 AIR QUALITY STRESSORS

The changes to air quality will be described entirely in Section 3.2 (Air Quality) of this Supplement to the Draft EIS/OEIS.

3.0.2 ACOUSTIC STRESSORS

3.0.2.1 Sonar and Other Active Acoustic Sources

In Section 3.0.5.3.1.1 (Sonar and Other Active Acoustic Sources) of the Draft EIS/OEIS, Table 3.0-10 quantifies the acoustic sources proposed for use by the Navy. The applicable section of Table 3.0-10 is reproduced below as Table 3-1. Under the No Action Alternative, the number of training items associated with the ASW2 source class (the acoustic source class for the SSQ-125 Multistatic Active Coherent [MAC] sonobuoy) is reduced from 150 to 149, and increased under both Alternative 1 and Alternative 2 from 20 to 720 to reflect the changes in SSQ-125 MAC proposed annual sonobuoy use.

In this same table, under High-Frequency, HF1 hours increase due to the seven annual Submarine Mine Exercise events (see Section 2.3.4 – Submarine Mine Exercise). The revised section of Table 3.0-10 from the Draft EIS/OEIS is reproduced below as Table 3-1. Throughout the remainder of this document revisions to tables are shown with the old value in strikeout font, and the revised value in bold.

Table 3-1: Sonar and Other Active Acoustic Sources Quantitatively Analyzed; Extracted from Table 3.0-10 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

For Annual Training and Testing Activities								
Source Class Category	Source Class	Units	Annual Hours					
			No Action Alternative		Alternative 1		Alternative 2	
			Training	Testing	Training	Testing	Training	Testing
Anti-Submarine Warfare (ASW) Tactical sources used during anti-submarine warfare training and testing activities	ASW1	Hours	0	0	0	16	0	18
	ASW2 ¹	Hours	0	0	0	64	0	72
	ASW2 ¹	Items	150 149	0	20 720	170	20 720	187
	ASW3	Hours	0	4	78	444	78	488
	ASW4	Items	0	1,088	0	1,182	0	1,277

¹ The ASW2 bin contains some sources that are analyzed by hours and some that are analyzed by count. There is no overlap of the numbers in the two rows.

Table 3-1: Sonar and Other Active Acoustic Sources Quantitatively Analyzed; Extracted from Table 3.0-10 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action (continued)

For Annual Training and Testing Activities								
Source Class Category	Source Class	Units	Annual Hours					
			No Action Alternative		Alternative 1		Alternative 2	
			Training	Testing	Training	Testing	Training	Testing
High-Frequency (HF) Tactical and nontactical sources that produce signals greater than 10 kHz but less than 180 kHz	HF1	Hours	46 44	0	48	161	48	177
	HF3	Hours	0	0	0	145	0	191
	HF4	Hours	0	0	384	0	384	0
	HF5	Hours	0	0	0	360	0	396
	HF6	Hours	180	416	192	2,099	192	2,658

3.0.2.2 Explosives

In Section 3.0.5.3.1.2 (Explosives) of the Draft EIS/OEIS, Table 3.0-11 quantifies the explosives proposed for use by the Navy. The applicable section of Table 3.0-11 is reproduced below as Table 3-2. Sonobuoys fall under the explosive class of E4 (>2.5-6 lb. Net Explosive Weight). The No Action Alternative number of sonobuoys is corrected from 150 to 149 per year. Because of the elimination of the SSQ-110 Improved Extended Echo Ranging (IEER) sonobuoys under Alternative 1 and 2, the number of E4 explosives in Table 3-2 is reduced from 150 per year to 0 per year. The revised numbers are shown in Table 3-2.

Table 3-2: Explosives for Training and Testing Activities in the Northwest Training and Testing Study Area; Extracted from Table 3.0-11 in the Draft EIS/OEIS and Updated to Reflect Changes to the Proposed Action

Explosives	Location	Training Activities			Testing Activities		
		No Action Alternative	Alternative 1	Alternative 2	No Action Alternative	Alternative 1	Alternative 2
E4 (>2.5–5 lb. NEW)	Offshore Area	150 149	150 0	150 0	0	70	77
	Inland Waters	0	0	0	0	0	0
	Behm Canal	0	0	0	0	0	0
	Total	150 149	150 0	150 0	0	70	77

Notes: lb. = pound(s), NEW = Net Explosive Weight

3.0.3 PHYSICAL DISTURBANCE AND STRIKE STRESSORS**3.0.3.1 Vessels**

In Section 3.0.5.3.3.1 (Vessels) of the Draft EIS/OEIS, Table 3.0-16 describes the representative vessels proposed for use by the Navy. Table 3.0-16 is reproduced below as Table 3-3. Because of the inclusion of MSO activities for analysis, Table 3.0-16 is revised to include vessels planned for use during these activities. The revised information is shown in Table 3-3.

Table 3-3: Representative Vessel Types, Lengths, and Speeds; Extracted from Table 3.0-16 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Type	Example(s)	Length	Typical Operating Speed	Max Speed
Aircraft Carrier	Aircraft Carrier	> 980 ft. > 300 m	10–15 knots	30+ knots
Surface Combatant	Cruisers, Destroyers, Frigates, Littoral Combat Ships	330–660 ft. 100–200 m	10–15 knots	30+ knots
Support Craft/Other	Range Support Craft; Combat Rubber Raiding Craft; Landing Craft, Mechanized; Landing Craft, Utility; Submarine Tenders; Yard Patrol Craft; Protection Vessels ; Barge	16– 150 250 ft. 5– 45 80 m	Variable	20 knots
Support Craft/Other – Specialized High Speed	Patrol Coastal Ships, Patrol Boats , Rigid Hull Inflatable Boat, High Speed Protection Vessels	33 65 –130 ft. 10 20 –40 m	Variable	50+ knots
Submarines	Fleet Ballistic Missile Submarines, Attack Submarines, Guided Missile Submarines	330–660 ft. 100–200 m	8–13 knots	20+ knots

Notes: New examples are shown in **bold**, ft. = feet, m = meters

Table 3.0-17 from the Draft EIS/OEIS quantifies the annual number of events that include vessel movement. Table 3.0-17 is reproduced below as Table 3-4. All MSO activities would occur in the Inland Waters (Puget Sound) and all involve vessel movement. MSO accounts for 286 activities, but increase the values in Table 3-4 by only 282 because of the elimination of the four annual Gunnery Exercise activities (see Section 2.2 – Maritime Security Operations). These activities have been added to the Inland Waters total under Alternative 1 and Alternative 2.

Also in this table, the Offshore Area annual events have been revised. Table 3-4 accounts for the revised number of events with vessel movements in the Inland Waters and the Offshore Area as a result of changes in the Proposed Action addressed in this Supplement. Under the No Action Alternative, seven events were added to account for the Submarine Mine Exercise (see Section 2.3.4). Under Alternative 1 and Alternative 2, the Draft EIS/OEIS failed to account for 20 annual events attributed to Gunnery Exercise training in the Offshore Area that are ongoing and were previously analyzed (U.S. Department of the Navy 2010); therefore, this number is increased by 20.

Table 3-4: Annual Number of Events Including Vessel Movement by Location; Extracted from Table 3.0-17 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Activity Area	Training			Testing		
	No Action Alternative	Alternative 1	Alternative 2	No Action Alternative	Alternative 1	Alternative 2
Offshore Area	996 1,003	1,096 1,116	1,096 1,116	37	138	162
Inland Waters	4	28 310	28 310	337	582	640
Western Behm Canal	0	0	0	28	60	83
Total (All Areas)	1,000 1,007	1,124 1,430	1,124 1,430	402	780	885

3.0.3.2 In-Water Devices

In Section 3.0.5.3.3.2 (In-Water Devices) of the Draft EIS/OEIS, Table 3.0-19 quantifies the annual number of events that include in-water devices. Table 3.0-19 is reproduced below as Table 3-5. The sonobuoys associated with the TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys) activities are considered in-water devices, so the annual number of these activities in the Offshore Area is revised. The number of No Action Alternative events is reduced by 42 (from 429 to 387) to correspond to the reduction in annual events from 54 to 12. Alternative 1 and Alternative 2 are each increased by 9 (from 484 to 493), which corresponds to an increase from 17 to 24 TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys) annual events and a calculation error in the Draft EIS/OEIS that recorded only 15 instead of 17 annual events. The revised numbers are shown in Table 3-5.

Table 3-5: Annual Number and Location of Events Including In-Water Devices; Extracted from Table 3.0-19 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Activity Area	Training			Testing		
	No Action Alternative	Alternative 1	Alternative 2	No Action Alternative	Alternative 1	Alternative 2
Offshore Area	429 387	484 493	484 493	40	154	183
Inland Waters	0	1 ¹	1	379	648	716
Total (All Areas)	429 387	485 494	485 494	419	802	899

¹ This event occurs once every 2 years under Alternative 1.

3.0.3.3 Military Expended Material

In Section 3.0.5.3.3.3 (Military Expended Material) of the Draft EIS/OEIS, Table 3.0-20 quantifies the annual number of non-explosive practice munitions expended annually in the NWTT Study Area. The applicable sonobuoy section of Table 3.0-20 is reproduced below as Table 3-6. Under the No Action Alternative, the number of sonobuoys is increased by 149. These sonobuoys were correctly analyzed in the Draft EIS/OEIS, but Table 3.0-20 did not include them for any alternative. Because of the increase in SSQ-125 MAC sonobuoys by 720 for Alternative 1 and Alternative 2, this table revision also includes an increase by 720 under those two alternatives. The revised numbers are shown below in Table 3-6.

Table 3-6: Number and Location of Non-Explosive Practice Munitions Expended Annually; Extracted from Table 3.0-20 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Location	Training			Testing		
	No Action Alternative	Alternative 1	Alternative 2	No Action Alternative	Alternative 1	Alternative 2
Sonobuoys (includes Sound Underwater Signal buoys)						
Offshore Area	8,208 8,357	8,208 8,928	8,208 8,928	200	1,000	1,097
Inland Waters	0	0	0	6	6	6

Table 3.0-21 quantifies the annual number of high-explosives that may result in fragments. The applicable section of Table 3.0-21 is reproduced below as Table 3-7. Because of the elimination of SSQ-110 IEER sonobuoys for both Alternative 1 and Alternative 2, this table has been revised. Under both Alternative 1 and Alternative 2 the number of explosive IEER sonobuoys is reduced from 150 per year to 0 per year. The revised numbers are shown in Table 3-7.

Table 3-7: Annual Number and Location of High-Explosives that May Result in Fragments; Extracted from Table 3.0-21 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Location	Training			Testing		
	No Action Alternative	Alternative 1	Alternative 2	No Action Alternative	Alternative 1	Alternative 2
Sonobuoys						
Offshore Area	150 149	150 0	150 0	0	142	156

3.0.3.4 Aircraft Movement

In Section 3.0.5.3.3.5 (Aircraft Strikes) of the Draft EIS/OEIS, Table 3.0-24 quantifies the annual number of events that include aircraft movement. Revisions to all of the training annual events are made in this Supplement, and are summarized in Table 3-8:

In the Offshore Area, the No Action Alternative in the Draft EIS/OEIS value of 3,826 annual events included three oversights, described below. The revised total is 5,342 annual events that include aircraft movement in the Offshore Area.

1. TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys). As discussed in this Supplement, Section 2.1 (TRACKEX – Maritime Patrol [Extended Echo Ranging Sonobuoys]), the number has been corrected from 54 to 12 annual events that include aircraft movement in the Offshore Area.
2. Although the HARM Exercise (Non-firing) was analyzed previously (U.S. Department of the Navy 2010) and is an ongoing activity, it was inadvertently left out of the Draft EIS/OEIS No Action Alternative, but is now included. This adds 1,740 to the total of annual events that include aircraft movement (see Section 2.3.3 – Inclusion of High-Speed Anti-Radiation Missile Exercise).
3. Search and Rescue. Table 3.0-24 in the Draft EIS/OEIS included an oversight in which 180 annual Search and Rescue Inland Water events were mistakenly added as Offshore Area events. These events were evaluated properly, but were not listed correctly on Table 3.0-24.

In the Offshore Area under Alternative 1 and Alternative 2, the Draft EIS/OEIS value of 6,471 annual events included three oversights, described below. The revised total is 8,040 annual events that include aircraft movement in the Offshore Area.

1. TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys). As discussed in Section 2.1 (TRACKEX – Maritime Patrol [Extended Echo Ranging Sonobuoys]), the number is increased by 7, from 17 to 24. In addition, an error was made in calculating the total annual events in Table 3.0-24 of the Draft EIS/OEIS, in which only 15 instead of the listed 17 events were added. This correction results in an additional 2 aircraft events to Table 3.0-24.
2. Although previously analyzed (U.S. Department of the Navy 2010) and an ongoing activity, the HARM Exercise (Non-firing), was not in the Draft EIS/OEIS but is now included. This adds 1,740 to the total of annual events that include aircraft movement (see Section 2.3.3 – Addition of High-Speed Anti-Radiation Missile Exercise).

3. Search and Rescue. Table 3.0-24 in the Draft EIS/OEIS included an error in which 180 annual Inland Water events (Search and Rescue) were mistakenly added as Offshore Area events.

In the Inland Waters under the No Action Alternative, the Search and Rescue activity included an oversight in Table 3.0-24 in which 180 annual events were mistakenly added as Offshore Area events. This number of annual events should have been 72, and the events should have been located in the Inland Waters.

In the Inland Waters under Alternative 1 and Alternative 2, the Draft EIS/OEIS value of 127 annual events included two oversights, described below. The revised total is 117 annual events that include aircraft movement in the Inland Waters.

1. Personnel Insertion/Extraction – Non Submersible. The training requirements for this activity have been reduced by 110 annual events, and this change was not reflected in the Draft EIS/OEIS (see Section 2.3.5 – Personnel Insertion/Extraction – Non-Submersible).
2. Search and Rescue. Table 3.0-24 in the Draft EIS/OEIS included an oversight in which 180 annual Search and Rescue Inland Water events were mistakenly added as Offshore Area events. This value should have been 100, and added as Inland Water events.

Table 3-8: Annual Number and Location of Events Including Aircraft Movement; Extracted from Table 3.0-24 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Activity Area	Training			Testing		
	No Action Alternative	Alternative 1	Alternative 2	No Action Alternative	Alternative 1	Alternative 2
Offshore Area ¹	3,826 5,342	6,471 8,040	6,471 8,040	2	74	84
Inland Waters ²	124 196	127 117	127 117	2	20	25

¹ All Offshore Area aircraft activities are fixed wing except for 4 each in Alternative 1 and Alternative 2.

² All Inland Waters aircraft activities are fixed wing.

3.0.4 ENTANGLEMENT STRESSORS

In Section 3.0.5.3.4.2 (Parachutes) of the Draft EIS/OEIS, Table 3.0-26 quantifies the annual number parachute/decelerators expended in the NWTT Study Area. Table 3.0-26 is reproduced below as Table 3-9. The sonobuoys associated with the TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys) each have a single decelerator/parachute, so for each change in the number of sonobuoys associated with this activity, there is an equal change to the number of decelerator/parachutes. Under both Alternative 1 and Alternative 2, the number of sonobuoys increases by 550 per year (addition of 700 MAC sonobuoys minus 150 IEER sonobuoys). Also, the Draft EIS/OEIS failed to account for the 20 MAC sonobuoys. Therefore, the number of expended decelerator/parachutes would increase from 8,382 in the Draft EIS/OEIS to 8,952. The revised numbers are shown in Table 3-9.

Table 3-9: Annual Number and Location of Expended Decelerator/Parachutes; Extracted from Table 3.0-26 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Activity Area	Training			Testing		
	No Action Alternative	Alternative 1	Alternative 2	No Action Alternative	Alternative 1	Alternative 2
Offshore Area	8,382	8,382 8,952	8,382 8,952	17	1,229	1,351
Inland Waters	0	0	0	4	4	5

3.0.5 ACCESS STRESSORS

The changes to access stressors and accessibility will be described entirely in Section 3.11 (American Indian and Alaska Native Traditional Resources) and Section 3.12 (Socioeconomic Resources) of this Supplement to the Draft EIS/OEIS.

3.0.6 CHANGES TO RESOURCE SECTIONS (SECTION 3.1 THROUGH SECTION 3.13)

As stated earlier, there are no changes to the Draft EIS/OEIS regarding the baseline environment, termed the affected environment, of any resource section as the characteristics of the affected environment have not changed. Please refer to the affected environment discussions in the NWTT Draft EIS/OEIS for the resource sections in this Supplement to the Draft EIS/OEIS. Also, the modifications to the Proposed Action do not result in any change to the analysis of impacts, or conclusions reached, for the following resources, and will not be discussed further:

- 3.1 Sediments and Water Quality. While the changes to the Proposed Action do include revised amounts of military expended materials (only sonobuoys and their decelerator/parachutes) that will enter the ocean, these changes relative to the totals of the Proposed Action are insignificant and do not rise to the level of any potential impacts to sediments and water quality.
- 3.3 Marine Habitats. As discussed for sediments and water quality, marine habitats are similarly unaffected by the changes to the Proposed Action. The increase in military expended materials is 570 sonobuoys and their decelerator/parachutes annually. This 7 percent increase is less than an increase of two per day over the entire 121,000 square nautical miles (nm²) of the Offshore Area. Therefore, the analysis in Section 3.3.3.2.2 (Military Expended Materials) of the Draft EIS/OEIS remains valid.
- 3.6 Birds. Although the large increase in the number of aircraft activities might normally result in an increased potential for bird strikes, in this case the activities were all previously analyzed in the Draft EIS/OEIS. The addition is only the result of an omission in the number that was presented in Section 3.0, not an actual increase in the number of aircraft flights. Also, these flights are conducted at high altitudes, where risk of bird strike is greatly reduced.
- 3.7 Marine Vegetation. As discussed for sediments and water quality, marine vegetation is similarly unaffected by the changes to the Proposed Action.
- 3.8 Marine Invertebrates. None of the Proposed Action changes result in increased stress on marine invertebrates.
- 3.9 Fish. Of the changes to the Proposed Action, the greatest impact to fish could come potentially from vessel strike, due to the number of vessel movements. However, as stated in Section 3.9.3.3.1 (Impacts from Vessels and In-Water Devices) of the Draft EIS/OEIS, "Exposure of fishes to vessel strike stressors is limited to those fish groups...that are large, slow-moving, and may occur near the surface, such as ocean sunfish, whale sharks, and basking sharks." These

fish are not significant in the Inland Waters where the vessel movements would increase. No other changes require revisions to the analysis of effects to fish.

- 3.10 Cultural Resources. None of the changes to the Proposed Action would be significant to the analysis of impacts to cultural resources such that the conclusions stated in the Draft EIS/OEIS would change. However, this is subject to change as the Navy proceeds through the steps required by Section 106 of the National Historic Preservation Act and its implementing regulations, including consultation with the Washington State Historic Preservation Officer, potentially affected tribes, and other interested parties.
- 3.13 Public Health and Safety. While the number of vessel movements could have an impact on public safety, the Navy's application of standard operating procedures would result in no change to the conclusions as stated in the Draft EIS/OEIS.

3.2 AIR QUALITY

The modifications to the Proposed Action alter the annual emission of criteria air pollutants. In addition to the changes described in Chapter 2 of this Supplement, numerous minor corrections to data entered into air emissions calculations in the Draft EIS/OEIS have resulted in changes across all Air Quality Control Regions and all three alternatives. Because the Proposed Action changes are to training activities, only the air emissions tables for training activities change and are included in this Supplement. While testing activities are not changed, tables that summarize the combined impacts of both training and testing will also have revised quantities and will be discussed here as well.

3.2.1 CHANGES TO CRITERIA AIR POLLUTANT EMISSIONS

Under Alternative 1 and Alternative 2, MSO activities would include the operation of multiple vessels for up to 18 hours per event, for 286 events per year. The air emissions of the maximum scope of this activity are reflected in the Section 3.2 air emissions tables as significant increases in two Air Quality Control Regions: the Olympic-Northwest Washington Intrastate region and the Puget Sound Intrastate Washington region.

The HARM Exercise activities would add aircraft flights under all alternatives, which were not included previously in the Draft EIS/OEIS. This is an ongoing activity that was analyzed previously in the Northwest Training Range Complex EIS/OEIS (U.S. Department of the Navy 2010). The air emissions of this activity affect the Olympic-Northwest Washington Intrastate and the International Air Quality Control Regions.

In addition to the changes from these two activities, other smaller changes and corrections are included in the analysis below. Changes in emissions from ordnance occur primarily as corrections to calculations. Also, emissions from ordnance and other sources are revised in numerous instances from 0.0 to <0.1 to reflect that while 0.0 was a close approximation to trace emissions, <0.1 more accurately depicts that some emissions occurred. Although no testing activities are changing from the Draft EIS/OEIS, some of these air emissions corrections affect the values shown for some testing activities. The extent of these changes to testing emissions values is shown below in Table 3-11, Table 3-13, and Table 3-15.

3.2.1.1 No Action Alternative Emissions

In Section 3.2.3.1.1.1 (Training) of the Draft EIS/OEIS, Table 3.2-3 quantifies the annual criteria air pollutant emissions for training under the No Action Alternative in the NWTT Study Area. Table 3.2-3 from the Draft EIS/OEIS is reproduced below as Table 3-10. When the modifications described above in Section 3.0 are factored in, several emissions values change related to aircraft, vessels, and ordnance. The revised numbers are shown in Table 3-10, which also includes corrections of calculation errors discovered in the Draft EIS/OEIS.

Table 3-10: Annual Criteria Air Pollutant Emissions from Training under the No Action Alternative; Extracted from Table 3.2-3 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Air Quality Control Region	Source Type	Air Pollutant Emissions (tons per year)						
		CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}	Total
Olympic-Northwest Washington Intrastate (WA)	Aircraft	0.7 0.3	0.7 0.3	0.1 0.0	0.2 0.1	0.5 0.2	0.5 0.2	2.2 0.9
	Vessels	0.2 1.7	5.5 2.7	0.0 0.2	0.0 0.8	0.1	0.1	6.7 5.5
	Ordnance	0.7 <0.1	0.4 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	1.1 <0.1
	Subtotal	1.6 2.0	6.6 3.0	0.1 0.2	1.1 0.9	0.6 0.3	0.6 0.3	10.0 6.4
Puget Sound Intrastate (WA)	Aircraft	0.3 0.1	0.3 0.1	0.0 <0.1	0.1 0.0	0.2 0.1	0.2 0.1	0.9 0.3
	Vessels	0.0 0.3	0.0 0.2	0.0 <0.1	0.0 0.1	0.0 <0.1	0.0 <0.1	0.0 0.6
	Ordnance	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1
	Subtotal	0.5 0.4	0.3	0.0 <0.1	0.1	0.2 0.1	0.2 0.1	1.1 0.9
Federal (3–12 nm)	Aircraft	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Vessels	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ordnance	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subtotal	0.0	0.0	0.0	0.0	0.0	0.0	0.0
International (+12 nm)	Aircraft	5.2 6.3	23.0 29.0	1.1 1.6	5.5 7.0	10.7 13.7	10.7 13.7	45.5 57.6
	Vessels	167.8 177.8	101.1 107.1	15.0 15.8	27.5 30.0	5.7 6.1	5.7 6.1	317.1 336.8
	Ordnance	1.8 2.9	0.4 0.2	0.0 <0.1	0.0 <0.1	0.1 0.9	0.1 0.9	2.3 4.0
	Subtotal	174.8 187.0	124.5 136.3	16.1 17.4	33 37.0	16.5 20.7	16.5 20.7	364.9 398.4
Study Area	Total	176.9 189.4	131.4 139.6	16.2 17.6	34.2 38.0	17.3 21.1	17.3 20.3	376.0 405.7

Notes: (1) CO = carbon monoxide, NO_x = nitrogen oxides, PM_{2.5} = particulate matter ≤ 2.5 microns in diameter, PM₁₀ = particulate matter ≤ 10 microns in diameter, SO_x = sulfur oxides, VOC = volatile organic compound. (2) Table includes criteria pollutant precursors (e.g., VOC). Individual values may not add exactly to total values due to rounding. Only air pollutants emitted below 3,000 feet above ground level are included in the analysis. PM_{2.5} is included in PM₁₀.

In Section 3.2.3.1.1.4 (Summary – No Action Alternative) of the Draft EIS/OEIS, Table 3.2-5 totals the annual criteria air pollutant emissions for both training and testing under the No Action Alternative in the NWTT Study Area. Table 3.2-5 from the Draft EIS/OEIS is reproduced below as Table 3-11 where the revised numbers are shown.

Table 3-11: Estimated Annual Criteria Air Pollutant Emissions in Northwest Training and Testing Study Area, No Action Alternative; Extracted from Table 3.2-5 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Source	Emissions by Air Pollutant (tons per year)						
	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}	Total
Training activities	176.9 189.4	131.4 139.6	16.2 17.6	34.2 38.0	17.3 21.1	17.3 21.1	376.0 405.7
Testing activities	18.5 17.6	7.0 6.7	1.0	1.0 1.8	0.2	0.2	28.6 27.3
Total Study Area	195.4 207.0	138.4 146.3	17.2 18.6	36.4 39.8	17.5 21.3	17.5 21.3	404.6 433.0

Notes: (1) CO = carbon monoxide, NO_x = nitrogen oxides, PM_{2.5} = particulate matter ≤ 2.5 microns in diameter, PM₁₀ = particulate matter ≤ 10 microns in diameter, SO_x = sulfur oxides, VOC = volatile organic compounds. (2) Table includes criteria pollutant precursors (e.g., VOC). Only air pollutants emitted below 3,000 feet above ground level are included in the analysis. PM_{2.5} is included in PM₁₀.

3.2.1.2 Alternative 1 Emissions

In Section 3.2.3.1.2.1 (Training) of the Draft EIS/OEIS, Table 3.2-6 quantifies the annual criteria air pollutant emissions for training under Alternative 1 in the NWTT Study Area. Table 3.2-6 from the Draft EIS/OEIS is reproduced below as Table 3-12. When the modifications described above in Section 3.0 are factored in, several emissions values change related to aircraft, vessels, and ordnance. The revised numbers are shown in Table 3-12, which also includes corrections of calculation errors discovered in the Draft EIS/OEIS.

Table 3-12: Annual Criteria Air Pollutant Emissions from Training under Alternative 1; Extracted from Table 3.2-6 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Air Quality Control Region	Source Type	Air Pollutant Emissions (tons per year)						
		CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}	Total
Olympic-Northwest Washington Intrastate (WA)	Aircraft	4.0 0.6	1.0	0.1	0.3	0.7 0.4	0.7 0.4	3.4 2.4
	Vessels	0.0 88.3	0.8 38.6	0.0 5.4	0.4 9.6	0.0 1.0	0.0 1.0	0.9 142.9
	Ordnance	0.4 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.4 <0.1	0.4 <0.1	0.2 <0.1
	Subtotal	4.2 88.9	1.9 39.6	0.4 5.5	0.5 9.9	0.8 1.4	0.8 1.4	4.2 145.3
Puget Sound Intrastate (WA)	Aircraft	0.3 0.1	0.3 0.1	0.0 <0.1	0.4 <0.1	0.2 0.1	0.2 0.1	0.9 0.3
	Vessels	0.0 70.3	0.0 29.8	0.0 4.4	0.0 7.3	0.0 0.7	0.0 0.7	0.0 112.5
	Ordnance	0.4 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.4 <0.1	0.4 <0.1	0.2 <0.1
	Subtotal	0.5 70.4	0.4 29.9	0.0 4.4	0.4 7.3	0.4 0.8	0.4 0.8	1.1 112.8
Federal (3–12 nm)	Aircraft	0.0 0.3	0.0 0.3	0.0 <0.1	0.0 0.1	0.0 0.2	0.0 0.2	0.0 0.9
	Vessels	0.0 2.2	0.0 1.5	0.0 0.2	0.0 0.7	0.0 0.1	0.0 0.1	0.0 4.7
	Ordnance	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1
	Subtotal	0.0 2.5	0.0 1.8	0.0 0.2	0.0 0.8	0.0 0.3	0.0 0.3	0.0 5.6
International (+12 nm)	Aircraft	3.3 4.6	24.2 33.0	0.7 1.2	5.3 7.4	4.5 2.2	4.5 2.2	35.0 48.3
	Vessels	469.7 174.5	402.4 105.5	45.4 15.6	27.8 29.4	5.8 6.1	5.8 6.1	320.5 331.1
	Ordnance	4.3 2.9	0.4 0.2	0.0 <0.1	0.0 <0.1	0.4 0.9	0.4 0.9	4.9 4.0
	Subtotal	474.3 182.0	427.0 138.7	45.8 16.8	33.4 36.7	7.4 9.2	7.4 9.2	357.6 383.4
Study Area	Total	476.0 343.9	429.3 209.9	46.0 26.9	33.7 54.7	8.5 11.7	8.5 11.7	363.5 647.1

Notes: (1) CO = carbon monoxide, NO_x = nitrogen oxides, PM_{2.5} = particulate matter ≤ 2.5 microns in diameter, PM₁₀ = particulate matter ≤ 10 microns in diameter, SO_x = sulfur oxides, VOC = volatile organic compounds. (2) Table includes criteria pollutant precursors (e.g., VOC). Individual values may not add exactly to total values due to rounding. Only air pollutants emitted below 3,000 feet above ground level are included in the analysis. PM_{2.5} is included in PM₁₀.

In Section 3.2.3.1.2.4 (Summary – Alternative 1) of the Draft EIS/OEIS, Table 3.2-8 totals the annual criteria air pollutant emissions for both training and testing under Alternative 1 in the NWTT Study Area. Table 3.2-8 from the Draft EIS/OEIS is reproduced below as Table 3-13, where the revised numbers are shown.

Table 3-13: Estimated Annual Criteria Emissions in the Northwest Training and Testing Study Area under Alternative 1; Extracted from Table 3.2-8 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Source	Emissions by Air Pollutant (tons per year)						
	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}	Total
Training activities	176.0 343.9	129.3 209.9	16.0 26.9	33.7 54.7	8.5 11.7	8.5 11.7	363.5 647.1
Testing activities	25.9 47.3	12.7 44.3	1.7 7.2	2.6 6.0	0.2 2.4	0.2 2.4	43.1 107.2
Total Study Area	201.9 391.2	142.0 254.2	17.7 34.1	36.3 60.7	8.7 14.1	8.7 14.1	406.6 754.3
No Action Alternative	403.8 207.0	284.0 146.3	35.4 18.6	72.6 39.8	17.4 21.3	17.4 21.3	813.2 433.0
Net change (tons per year)	6.5 184.2	3.6 107.9	0.5 15.5	0.2 20.9	-8.8 -7.2	-8.8 -7.2	-406.6 321.3
Net change (%)	3.3 89%	2.6 74%	2.9 83%	0.6 53%	-50.3 -34%	-50.3 -34%	-50.0 74%

Notes: (1) CO = carbon monoxide, NO_x = nitrogen oxides, PM_{2.5} = particulate matter ≤ 2.5 microns in diameter, PM₁₀ = particulate matter ≤ 10 microns in diameter, SO_x = sulfur oxides, VOC = volatile organic compounds. (2) Table includes criteria pollutant precursors (e.g., VOC). Individual values may not add exactly to total values due to rounding. Only air pollutants emitted below 3,000 feet above ground level are included in the analysis. PM_{2.5} is included in PM₁₀.

3.2.1.3 Alternative 2 Emissions

In Section 3.2.3.1.3.1 (Training) of the Draft EIS/OEIS, Table 3.2-9 quantifies the annual criteria air pollutant emissions for training under Alternative 2 in the NWTT Study Area. Table 3.2-9 from the Draft EIS/OEIS is reproduced below as Table 3-14. When the modifications described above in Section 3.0 are factored in, several emissions values change related to aircraft, vessels, and ordnance. The revised numbers are shown in Table 3-14 which also includes corrections of calculation errors discovered in the Draft EIS/OEIS.

Table 3-14: Annual Criteria Air Pollutant Emissions from Training under Alternative 2; Extracted from Table 3.2-9 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Air Quality Control Region	Source Type	Air Pollutant Emissions (tons per year)						
		CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}	Total
Olympic-Northwest Washington Intrastate (WA)	Aircraft	1.0 0.5	1.0	0.1	0.3 0.2	0.7 0.4	0.7 0.4	3.1 2.2
	Vessels	0.0 88.6	0.0 38.8	0.0 5.5	0.0 9.7	0.0 1.0	0.0 1.0	0.0 143.6
	Ordnance	0.1 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.1 <0.1	0.1 <0.1	0.2 <0.1
	Subtotal	1.1 89.1	1.0 39.8	0.1 5.6	0.3 9.9	0.8 1.4	0.8 1.4	3.3 145.8
Puget Sound Intrastate (WA)	Aircraft	0.3 0.1	0.3 0.1	0.0 <0.1	0.0 <0.1	0.2 0.1	0.2 0.1	0.9 0.3
	Vessels	0.0 70.3	0.0 29.8	0.0 4.4	0.0 7.3	0.0 0.7	0.0 0.7	0.0 112.5
	Ordnance	0.1 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.1 <0.1	0.1 <0.1	0.2 <0.1
	Subtotal	0.4 70.4	0.3 29.9	0.0 4.4	0.1 7.3	0.3 0.8	0.3 0.8	1.1 112.8
Federal (3–12 nm)	Aircraft	0.0 0.4	0.0 0.4	0.0	0.0 0.1	0.0 0.3	0.0 0.3	0.0 1.2
	Vessels	0.0 3.0	0.0 2.0	0.0 0.3	0.0 1.0	0.0 0.2	0.0 0.2	0.0 6.5
	Ordnance	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1	0.0 <0.1
	Subtotal	0.0 3.4	0.0 2.4	0.0 0.3	0.0 1.1	0.0 0.5	0.0 0.5	0.0 7.7
International (+12 nm)	Aircraft	3.3 4.6	24.2 32.9	0.7 1.0	5.3 7.4	1.5 2.1	1.5 2.1	35.0 48.2
	Vessels	169.7 173.0	102.4 104.6	15.1 15.4	27.8 28.9	5.8 6.0	5.8 6.0	320.5 327.9
	Ordnance	1.3 2.9	0.4 0.2	0.0 <0.1	0.0 <0.1	0.1 0.9	0.1 0.9	1.8 4.0
	Subtotal	174.3 180.5	127.0 137.7	15.8 16.6	33.1 36.3	7.4 9.0	7.4 9.0	357.6 380.1
Study Area	Total	175.8 343.5	128.3 209.8	15.9 26.8	33.5 54.6	8.5 11.7	8.5 11.7	362.0 646.4

Notes: (1) CO = carbon monoxide, NO_x = nitrogen oxides, PM_{2.5} = particulate matter ≤ 2.5 microns in diameter, PM₁₀ = particulate matter ≤ 10 microns in diameter, SO_x = sulfur oxides, VOC = volatile organic compounds. (2) Air pollutant emissions estimated to the nearest ton per year. Table includes criteria pollutant precursors (e.g., VOC). Individual values may not add exactly to total values due to rounding. Only air pollutants emitted below 3,000 feet above ground level are included in the analysis. PM_{2.5} is included in PM₁₀.

In Section 3.2.3.1.3.4 (Summary – Alternative 2) of the Draft EIS/OEIS, Table 3.2-11 totals the annual criteria air pollutant emissions for both training and testing under Alternative 2 in the NWTT Study Area. Table 3.2-11 from the Draft EIS/OEIS is reproduced below as Table 3-15 where the revised numbers are shown.

Table 3-15: Estimated Annual Criteria Air Pollutant Emissions in Northwest Training and Testing Study Area, Alternative 2; Extracted from Table 3.2-11 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Source	Emissions by Air Pollutant (tons per year)						
	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}	Total
Training activities	173.0 343.5	123.2 209.8	15.6 26.8	32.4 54.6	8.2 11.7	8.2 11.7	352.4 646.4
Testing activities	27.7 58.6	13.8 59.0	1.7 9.7	3.0 7.5	0.6 3.5	0.6 3.5	46.8 138.3
Total Study Area	200.7 402.1	137.0 268.8	17.3 36.5	35.4 62.1	8.8 15.2	8.8 15.2	399.2 784.7
No Action Alternative	401.4 207.0	274.0 146.3	34.6 18.6	70.8 39.8	17.6 21.3	17.6 21.3	798.4 433.0
Net change (tons per year)	5.3 195.1	1.4 122.5	0.1 17.9	0.7 22.3	8.7 -6.1	8.7 -6.1	399.2 351.7
Net change (%)	2.7 94%	1.0 84%	0.6 96%	1.9 56%	50 -29%	50 -29%	50.0 81%

Notes: (1) CO = carbon monoxide, NO_x = nitrogen oxides, PM_{2.5} = particulate matter ≤ 2.5 microns in diameter, PM₁₀ = particulate matter ≤ 10 microns in diameter, SO_x = sulfur oxides, VOC = volatile organic compounds. (2) Table includes criteria pollutant precursors (e.g., VOC). Individual values may not add exactly to total values due to rounding. Only air pollutants emitted below 3,000 feet above ground level are included in the analysis. PM_{2.5} is included in PM₁₀.

3.2.2 AIR QUALITY SUMMARY

All of the air emissions sources proposed in this EIS/OEIS are mobile sources and do not impact the current attainment status of the Air Quality Control Regions in the Study Area. The annual numbers of Navy training and testing activities in the Study Area would increase relative to the No Action Alternative. Total emissions of criteria pollutants would increase substantially due to increases in the numbers of several training activities and the addition of new activities. Criteria air pollutants emitted in the Study Area could be transported ashore but would not affect the attainment status of the relevant air quality control regions. The amounts of air pollutants emitted in the Study Area and subsequently transported ashore would be minimal because (1) emissions from Navy training and testing activities would be small compared to the amounts of air pollutants emitted by sources ashore, (2) the air pollutants would be emitted over a large area, (3) the distances the air pollutants would be transported are often large, and (4) the pollutants would be substantially dispersed during transport. The criteria air pollutants emitted over nonterritorial waters within the Study Area would be dispersed over vast areas of open ocean and thus would not cause significant harm to environmental resources in those areas.

REFERENCES CITED

U.S. Department of the Navy. (2010). Northwest Training Range Complex Environmental Impact Statement/Overseas Environmental Impact Statement. Prepared by U.S. Pacific Fleet.

3.4 MARINE MAMMALS

The changes to the Proposed Action could result in changes to the impacts to marine mammals through two stressors: acoustic, or physical disturbance and strike. All other baseline affected environment information and analyses related to marine mammals and other stressors remains valid in the Draft EIS/OEIS (see the Draft EIS/OEIS Section 3.4.3 – Environmental Consequences). After considering the changes to the Proposed Action, including vessel movements associated with MSO activities and additional sonobuoys expended during TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys), the Navy concluded that the potential for physical disturbance and strike to marine mammals would not significantly increase over the impacts described in the Draft EIS/OEIS (see the Draft EIS/OEIS Section 3.4.3.4 – Physical Disturbance and Strike Stressors). The vessel movement associated with MSO events would occur in the commercial shipping channels of the Inland Waters, where large marine mammals occur less frequently; therefore the risk of a vessel strike is minimal.

Regarding the potential for a marine mammal to be struck by military expended materials, the only increase in military expended materials is the increase of approximately 550 sonobuoys in the Offshore Area. Using the methodology presented in Appendix I (Statistical Probability Analysis for Estimating Direct Air Strike Impact and Number of Potential Exposures) in the Draft EIS/OEIS, the potential for a strike of any marine mammal species is 0.00024 percent per year. This potential included all military expended materials, totaling nearly 200,000 items in the Offshore Area. An increase of 550 sonobuoys has no measurable effect on that probability, and the analysis and conclusions related to physical disturbance and strike remain valid in the Draft EIS/OEIS. Therefore, further discussion of impacts from physical disturbance and strike are not carried forward.

The revised level of acoustic activity in the Proposed Action was analyzed using the same method described in the Draft EIS/OEIS (see Section 3.4.3.1 – Acoustic Stressors). Although the number of predicted effects developed through the analysis (modeling combined with post-modeling analysis) changes for some species, the relative importance of those effects to the marine mammal populations does not change substantially. These revisions to the numbers of predicted effects are shown below in Table 3-16. As is evident from Table 3-16, all increases to predicted effects are considered Level B behavioral harassment under the Marine Mammal Protection Act (MMPA). As described in the Draft EIS/OEIS (see Section 3.4.3.2 (Impact Analysis for Acoustic Stressors) and due to the nature of the proposed training activities, these predicted effects are unlikely to cause long-term consequences for individual animals or populations.

3.4.1 CHANGES TO IMPACTS FROM THE USE OF SONAR AND OTHER ACTIVE SOURCES

In Section 3.4.3.2.1.3 (Predicted Impacts for Sonar and Other Active Acoustic Sources), Table 3.4-17 presents the annual training effects for sonar and other active acoustic sources. Table 3.4-17 from the Draft EIS/OEIS is reproduced below as Table 3-16. An extensive amount of information regarding marine mammal thresholds, criteria, and sensitivities is contained in Section 3.4 (Marine Mammals) of the Draft EIS/OEIS and remains unchanged.

3.4.1.1 No Action Alternative Changes to Environmental Consequences

The No Action Alternative of the Proposed Action is revised to include the 28 annual HF1 hours associated with the Submarine Mine Exercise (see Section 2.3.4). The additional acoustic energy results in an increased number of predicted effects for marine mammal species. The change in the quantified impacts is shown in Table 3-16 by marine mammal species, but these revised exposure estimates do not change either the analysis or the conclusions, except for the revised total number of Level B effects

Table 3-16: Annual Training Effects for Sonar and Other Active Acoustic Sources; Extracted from Table 3.4-17 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Species	Stock	No Action Alternative			Alternative 1			Alternative 2		
		Behavioral	TTS	PTS	Behavioral	TTS	PTS	Behavioral	TTS	PTS
North Pacific right whale	Eastern North Pacific	0	0	0	0	0	0	0	0	0
Humpback whale	CA/OR/WA	2	1	0	7	5	0	7	5	0
	Central North Pacific	0	0	0	0	0	0	0	0	0
Blue whale	Eastern North Pacific	1	0	0	3	2	0	3	2	0
Fin whale	Northeast Pacific	0	0	0	0	0	0	0	0	0
	CA/OR/WA	4	2	0	14	10 11	0	14	10 11	0
Sei whale	Eastern North Pacific	0	0	0	0	0	0	0	0	0
Minke whale	Alaska	0	0	0	0	0	0	0	0	0
	CA/OR/WA	3	1	0	9	9	0	9	9	0
Gray whale	Eastern North Pacific	0	0	0	0	6	0	0	6	0
	Western North Pacific	0	0	0	0	0	0	0	0	0
Sperm whale	North Pacific	0	0	0	0	0	0	0	0	0
	CA/OR/WA	26	0	0	80 81	0	0	80 81	0	0
<i>Kogia</i> (spp.)	CA/OR/WA	0	2 3	0	13 14	56 59	0	13 14	56 59	0
Killer whale	Alaskan Resident	0	0	0	0	0	0	0	0	0
	Northern Resident	0	0	0	0	0	0	0	0	0
	West Coast Transient	0	0	0	5	3 4	0	5	3 4	0
	East. N. Pac. Offshore	4	0	0	12	1	0	12	1	0
	Southern Resident	0	0	0	2	0	0	2	0	0
Short-finned pilot whale	CA/OR/WA	0	0	0	0	0	0	0	0	0
Short-beaked common dolphin	CA/OR/WA	289 291	16	0	664 683	51	0	664 683	51	0
Bottlenose dolphin	CA/OR/WA	0	0	0	0	0	0	0	0	0
Striped dolphin	CA/OR/WA	6	0	0	9 20	9 2	0	9 20	9 2	0
Pacific white-sided dolphin	North Pacific	0	0	0	19 0	2 0	0	19 0	2 0	0
	CA/OR/WA	1,137 1,143	75	0	3,176 3,234	248	0	3,176 3,234	248	0
Northern right whale dolphin	CA/OR/WA	377 378	23	0	1,212 1,234	97 98	0	1,212 1,234	97 98	0
Risso's dolphin	CA/OR/WA	220 221	9	0	613 624	33	0	613 624	33	0

Table 3-16: Annual Training Effects for Sonar and Other Active Acoustic Sources; Extracted from Table 3.4-17 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action (continued)

Species	Stock	No Action Alternative			Alternative 1			Alternative 2		
		Behavioral	TTS	PTS	Behavioral	TTS	PTS	Behavioral	TTS	PTS
Harbor porpoise	Southeast Alaska	0	0	0	0	0	0	0	0	0
	Northern OR/WA Coast	7,442 7,461	0 7	0	2,139 34,996	8 10	0	2,139 34,996	8 10	0
	N. CA/S. OR	11,163 11,192	0 11	0	3,209 52,494	12 15	0	3,209 52,494	12 15	0
	WA Inland Waters	0	0	0	571	844 842	1	571	844 842	1
Dall's porpoise	Alaska	0	0	0	0	0	0	0	0	0
	CA/OR/WA	125	884 922	0	758 776	2,714 2,951	2	758 776	2,714 2,951	2
Cuvier's beaked whale	Alaska	0	0	0	0	0	0	0	0	0
	CA/OR/WA	69 70	0	0	311 353	0	0	311 353	0	0
Baird's beaked whale	Alaska	0	0	0	0	0	0	0	0	0
	CA/OR/WA	135 136	0	0	522 591	0	0	522 591	0	0
<i>Mesoplodon</i> beaked whales	CA/OR/WA	279 281	0	0	1,245 1,415	2	0	1,245 1,415	2	0
Steller sea lion	Eastern U.S.	118	0	0	398 404	0	0	398 404	0	0
Guadalupe fur seal	Mexico	11	0	0	37 7	0	0	37 7	0	0
California sea lion	U.S.	228 229	0	0	796 807	7	0	796 807	7	0
Northern fur seal	Eastern Pacific	787 789	0	0	2,452 2,494	1	0	2,452 2,494	1	0
	California	11 12	0	0	37	0	0	37	0	0
Northern elephant seal	California Breeding	335 338	55	0	990 1,017	250 253	0	990 1,017	250 253	0
Harbor seal	SE Alaska-Clarence St.	0	0	0	0	0	0	0	0	0
	OR/WA Coastal	0	0	0	0	0	0	0	0	0
	WA Inland Waters	0	0	0	174 175	373	4	174 175	373	4
Northern sea otter	SE Alaska	0	0	0	0	0	0	0	0	0
	Washington	0	0	0	0	0	0	0	0	0

Notes: CA = California, N = North, Pac = Pacific, PTS = Permanent Threshold Shift, S = South, SE = Southeast, St. = Strait, TTS = Temporary Threshold Shift, OR = Oregon, U.S. = United States, WA = Washington

stated in the conclusions. The revised numbers of predicted effects are shown as strikeout font in the conclusions presented next. No other aspect of the conclusions is changed from the Draft EIS/OEIS.

Conclusion

Training activities under the No Action Alternative include the use of sonar and other active acoustic sources. These activities would result in inadvertent takes of marine mammals in the Study Area.

Pursuant to the MMPA, the use of sonar and other active acoustic sources for training activities as described in the No Action Alternative:

- *May expose marine mammals up to ~~23,840~~ **23,956** times annually to sound levels that would be considered Level B harassment*
- *Would not expose marine mammals to sound levels that would be considered Level A harassment*

Pursuant to the Endangered Species Act (ESA), the use of sonar and other active acoustic sources during training activities as described in the No Action Alternative:

- *May affect, and is likely to adversely affect humpback whale, blue whale, fin whale, sperm whale*
- *May affect, but is not likely to adversely affect, sei whale, Western North Pacific gray whale, and southern resident killer whale, and Guadalupe fur seal*
- *Would have no effect on North Pacific right whale*
- *Would have no effect on southern resident killer whale critical habitat*

3.4.1.2 Alternative 1 Changes to Environmental Consequences

Alternative 1 of the Proposed Action is revised to increase the number of SSQ-125 MAC sonobuoys proposed from 20 to 720. This increase is also reflected in this Supplement to the Draft EIS/OEIS in Table 3-1, where the increase is noted for the acoustic source class ASW2. The additional acoustic energy results in an increased number of predicted effects for marine mammal species. The change to the analysis of impacts is summarized by the increases shown in Table 3-16. The revised conclusions are presented next.

Conclusion

Training activities under Alternative 1 include the use of sonar and other active acoustic sources. These activities would result in inadvertent takes of marine mammals in the Study Area.

Pursuant to the MMPA, the use of sonar and other active acoustic sources for training activities as described under Alternative 1:

- *May expose marine mammals up to ~~24,199~~ **107,062** times annually during a maximum year to sound levels that would be considered Level B harassment*
- *May expose harbor seals up to four times, Dall's porpoise up to two times, and harbor porpoise one time annually during a maximum year to sound levels that would be considered Level A harassment*

Pursuant to the ESA, the use of sonar and other active acoustic sources during training activities as described under Alternative 1:

- *May affect, and is likely to adversely affect, humpback whale, blue whale, fin whale, sperm whale, southern resident killer whale, and Guadalupe fur seal*
- *May affect, but is not likely to adversely affect, sei whale, and Western North Pacific gray whale*
- *Would have no effect on North Pacific right whale*
- *Would have no effect on southern resident killer whale critical habitat*

3.4.1.3 Alternative 2 Changes to Environmental Consequences

The Alternative 2 changes are identical to the Alternative 1 changes described above.

3.4.2 MARINE MAMMAL SUMMARY

While the numbers of predicted effects to some marine mammal species would increase as a result of the change in the Proposed Action, these increases do not result in any long-term consequences for any marine mammal population or species; therefore, the conclusions stated in the Draft EIS/OEIS remain unchanged. See the Draft EIS/OEIS Section 3.4.4.1 (Summary of Monitoring and Observations During Navy Activities), providing a summary of 8 years of observations, research, and 80+ monitoring reports providing the record of best available science supporting these conclusions.

3.5 SEA TURTLES

Sea turtles are not expected in the Puget Sound, so any modifications to activities occurring in the Inland Waters portion of the Study Area would have no effect on sea turtles and are not further considered. The changes to the TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys) activity could result in changes to the impacts to sea turtles through four stressors: acoustic, physical disturbance and strike, entanglement, or ingestion. While the number of annual events for this activity was reduced under the No Action Alternative, the type and number of sonobuoys used did not change, which results in no change to impacts under the No Action Alternative. The change to the Proposed Action under Alternative 1 and Alternative 2 would result in a net increase of approximately 550 sonobuoys and decelerator/parachutes annually in the Offshore Area of the NWTT Study Area.

After considering the changes to the Proposed Action, the Navy concluded that the potential for physical disturbance and strike to sea turtles from these changes would not affect the analysis or conclusions. Increases in vessel movement occur only in the Inland Waters where sea turtles are not expected. The only revision in the Offshore Area that could result in physical disturbance or strike to sea turtles would be from increased use of sonobuoys related to the TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys) activity. Using the methodology presented in Appendix I (Statistical Probability Analysis for Estimating Direct Air Strike Impact and Number of Potential Exposures) in the Draft EIS/OEIS, the potential for a leatherback sea turtle strike was less than 0.00001 percent per year. This potential included all military expended materials, totaling nearly 200,000 items in the Offshore Area. An increase of approximately 550 sonobuoys has no measurable effect on that probability, and the analysis and conclusions related to physical disturbance and strike remain valid in the Draft EIS/OEIS. Therefore, further discussion of impacts from physical disturbance and strike are not carried forward.

After considering the changes to the Proposed Action, the Navy concluded that the potential for entanglement in or ingestion of military expended materials from these changes would not affect the analysis or conclusions. The only revision in the Offshore Area that could result in entanglement or ingestion risks to sea turtles would be from increased use of sonobuoys and their decelerator/parachutes related to the TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys) activity. As stated in the Draft EIS/OEIS, the leatherback is known to forage on jellyfish at or near the surface, rather than at depth, and decelerator/parachutes may resemble jellyfish. However, the decelerator/parachutes sink quickly to the ocean bottom and the potential for a sea turtle to encounter an expended decelerator/parachute at the surface or in the water column is extremely low given the general improbability of a sea turtle being near the deployed decelerator/parachute. An increase of approximately 550 sonobuoys out of approximately 9,000 expended annually in the 121,000 nm² Offshore Area has a minimal effect on that probability, and the analysis and conclusions related to entanglement and ingestion remain valid in the Draft EIS/OEIS. Therefore, further discussion of impacts from entanglement or ingestion are not carried forward.

Sea turtles were not expected to receive any acoustic exposures from use of the SSQ-110 IEER sonobuoys in the Draft EIS/OEIS, and reducing the number of the IEER sonobuoys in the Supplement would not alter this result. The MAC sonobuoys do not have an explosive component and do not affect sea turtles in this way.

The potential impacts to sea turtles from sonar and other active sources from the modified Alternative 1 and Alternative 2 are assessed below.

3.5.1 CHANGES TO IMPACTS FROM THE USE OF SONAR AND OTHER ACTIVE SOURCES

In the Draft EIS/OEIS, Section 3.5.3.1.7 (Impacts from Sonar and Other Active Acoustic Sources), Table 3.5-4 presents the annual training effects for sonar and other active acoustic sources. Table 3.5-4 from the Draft EIS/OEIS is reproduced below as Table 3-17.

3.5.1.1 Alternative 1 Changes to Environmental Consequences

Alternative 1 is revised to increase the number of SSQ-125 MAC sonobuoys proposed from 20 to 720. This increase is also reflected in this Supplement to the Draft EIS/OEIS in Table 3-1, where the increase is noted for the acoustic source class ASW2. The additional acoustic energy results in one new estimated exposure for sea turtles. This increase is shown below in Table 3-17.

Table 3-17: Annual Total Model-Predicted Impacts on Leatherback Sea Turtles for Training Activities Using Sonar and Other Active Non-Impulse Acoustic Sources; Extracted from Table 3.5-4 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

No Action Alternative		Alternative 1		Alternative 2	
Temporary Threshold Shift	Permanent Threshold Shift	Temporary Threshold Shift	Permanent Threshold Shift	Temporary Threshold Shift	Permanent Threshold Shift
0	0	0 1	0	0 1	0

Section 3.5.3.1.7.2 (Alternative 1) of the Draft EIS/OEIS contains the analysis and conclusions for impacts from the use of sonar and other active sources and has been revised in this Supplement to the Draft EIS/OEIS to account for the change reflected in Table 3-17. The revised analysis section on training activities is included below. The changes to the section below center around the new predicted Temporary Threshold Shift (TTS) effect of one, when there were no predicted TTS effects in the Draft EIS/OEIS. As a result of this new predicted TTS effect, the ESA conclusion for the leatherback sea turtle changes from “No effect” to “May affect, likely to adversely affect.” There is no change to the conclusion of no effect on leatherback sea turtle critical habitat. *Note that all references to tables or sections refer to the Draft EIS/OEIS.*

Training Activities

Offshore Area

Use of sonar and other active acoustic sources during training activities is discussed in Section 3.0.5.3.1.1 (Sonar and Other Active Acoustic Sources) and increases under Alternative 1. Based on Navy Acoustic Effects Model (NAEMO) modeling, under Alternative 1, one sea turtle is predicted to experience TTS as a result of all Navy training activities (see Table 3.5-5), which would result in short-term reduced perception of sound within a limited frequency range, lasting from minutes to days, depending on the exposure. Cues preceding the commencement of the event (e.g., vessel presence and noise) may result in some animals departing the immediate area, even before active sound sources begin transmitting. Avoidance behavior could reduce the sound exposure level experienced by a sea turtle and therefore reduce the likelihood and degree of TTS predicted near sound sources. No sea turtles are predicted to experience Permanent Threshold Shift (PTS).

Sea turtles may exhibit short-term behavioral reactions, such as swimming away or diving to avoid the immediate area around a source, although studies examining sea turtle behavioral responses to sound have used impulse sources, not non-impulse sources. Pronounced reactions to acoustic stimuli could lead to a sea turtle expending energy and missing opportunities to forage. Acoustic exposures are

intermittent, allowing time to recover from an incurred energetic cost, resulting in no long-term consequence.

Because model-predicted impacts are conservative and any impacts would be short-term, potential impacts are not expected to result in substantial changes to behavior, growth, survival, annual reproductive success, lifetime reproductive success (fitness), or species recruitment, and are not expected to result in population-level impacts. Similar to the No Action Alternative, it is unlikely that noise from training activities would impact the main prey species of leatherback sea turtles.

*Pursuant to the ESA, sonar and other active acoustic sources associated with training activities under Alternative 1 ~~would have no effect on~~ **may affect, and are likely to adversely affect** leatherback sea turtles.*

Pursuant to the ESA, sonar and other active acoustic sources associated with training activities under Alternative 1 would have no effect on leatherback sea turtle critical habitat.

3.5.1.2 Alternative 2 Changes to Environmental Consequences

The Alternative 2 changes are identical to the Alternative 1 changes described above.

3.5.2 SEA TURTLE SUMMARY

For both Alternative 1 and Alternative 2, the number of exposures to sea turtles would increase from zero to one as a result of the change in the Proposed Action. Because of this increase, the ESA conclusions stated in the Draft EIS/OEIS will change to may affect, likely to adversely affect as described above. However, because model-predicted impacts are conservative and any impacts would be short-term, potential impacts are not expected to result in substantial changes to behavior, growth, survival, annual reproductive success, lifetime reproductive success (fitness), or species recruitment, and are not expected to result in population-level impacts.

3.11 AMERICAN INDIAN AND ALASKA NATIVE TRADITIONAL RESOURCES

The modifications to the Proposed Action occur only in the Offshore Area and Inland Waters of the NWTT Study Area. The modifications to the Proposed Action do not occur in the Alaska portion of the NWTT Study Area so the Draft EIS/OEIS analyses and conclusions for impacts to Alaska Native traditional resources remain valid.

Modifications to activities occurring in the Offshore Area may have impacts to American Indian tribes as residents of the region as discussed in Section 3.12 (Socioeconomic Resources) but there would be no impacts to tribal traditional resources. Modifications to activities in the Inland Waters may affect protected tribal resources of some federally-recognized tribes with treaty rights and traditional resources in the Inland Waters. The MSO activities involve vessel movements potentially impacting tribal access to treaty rights and access to usual and accustomed fishing grounds and stations within the Inland Waters. The MSO activities are proposed only for Alternative 1 and Alternative 2, and none of the other changes to the Proposed Action have the potential to impact American Indian traditional resources. Therefore, only MSO under Alternative 1 and Alternative 2 will be assessed here.

3.11.1 CHANGES TO ACCESSIBILITY IMPACTS

Section 3.11.3.1 (Accessibility) of the Draft EIS/OEIS has been changed. Prior to the discussion of the No Action Alternative, the following paragraphs have been added to describe the MSO activities and how those activities may impact accessibility:

The category of MSO includes several different components. One component of MSO is Transit Protection System (TPS). Each TPS event includes up to nine security vessels moving within Puget Sound and the Strait of Juan de Fuca. U.S. Coast Guard (USCG) personnel and their ancillary equipment and weapons systems are involved in these events. Generally, the escorts establish a moving perimeter (security zone) around the vessel to prevent other vessels from entering that security zone. Depending on the type of vessel escort being conducted and other conditions, the security zone could be from a 100-yard to a 1,000-yard radius around the escorted vessel. Other vessels might be ordered to move. Every two years, a TPS training event occurs which involves up to 16 vessels transiting from Hood Canal to Admiralty Inlet. During this biennial event, boat crews train to engage surface targets by firing small-caliber (blank) weapons.

Similar maritime security escort training occurs with Coastal Riverine Group (CRG) boat crews conducting force protection for designated vessels and movements. Using up to four vessels per event, these CRG boat crews train to protect ships while entering and leaving ports. Other missions include ensuring compliance with vessel security zones for ships in port and at anchor, conducting patrols to counter waterborne threats, and conducting harbor approach defense.

Notices to Mariners (NTMs) are issued in advance of TPS events only on a case-by-case basis due to national security reasons. If present, all other vessels would be required to exit the security zone in accordance with general regulations in 33 Code of Federal Regulations (C.F.R.) Section 165, Subpart D. Along the route between the homeport and the dive/surface point, tribal fishing vessels could be required to move outside the security zone surrounding the designated Navy vessel. Most often, this would mean relocating to a point closer to the shoreline. The impact to non-participating vessels would last until the transiting vessels have passed.

3.11.1.1 Alternative 1 Changes to Accessibility Impacts

Alternative 1 of the Draft EIS/OEIS has been revised to reflect the increased activities that could lead to reduced accessibility for American Indian tribes and nations to traditional use areas and resources. The Inland Waters subsection of Section 3.11.3.1.2.1 (Training) contains the analysis and conclusions for Alternative 1 regarding MSO and is included below. *Note that all references to tables or sections refer to the Draft EIS/OEIS.*

Inland Waters

The tribes of Puget Sound and the Strait of Juan de Fuca have usual and accustomed (U&A) fishing grounds and stations to which their perpetual access is affirmed through treaties and court decisions. Tribes harvest fish and shellfish for commercial, ceremonial and subsistence purposes. All of the Inland Waters of the NWTT Study Area are in co-use areas that include one or more tribes' U&A fishing grounds and stations.

For most Inland Waters activity except MSO, the Navy would continue to provide a NTM to the USCG in advance to support shared use of Puget Sound. The NTM allows American Indians to adjust their plans and sustain their fishing schedules. In addition, the Navy would continue the protocol to visually scan an area in order to ensure that non-participants are not present before initiating any training activity. These training activities in the Inland Waters could reduce tribal access to portions of their U&As. The Navy is conducting government-to-government consultation with potentially affected tribes regarding Navy activities that may have the potential to significantly affect protected tribal treaty rights and resources.

American Indian tribes would be given a notice approximately one hour prior to each TPS event. American Indians would have minimal time to adjust plans to sustain their fishing schedules. Tribal fishing vessels, commercial or private, which are on the water during a MSO may be required to temporarily abandon fishing gear in place and move to remain out of the security zone established by the security vessels. Although this displacement may be for only short distance and a brief duration, after which the fishing vessel can return, the fishing vessel may have used more fuel than expected, damage or loss of fishing gear may have occurred, and fish or shellfish harvest may be reduced for that day. When MSO activities coincide with a limited opening of a particular fishing season, loss of harvest could occur. The Navy is conducting government-to-government consultation with potentially affected tribes to improve coordination and communications so impacts to tribal fishing are minimized or eliminated.

American Indian traditional resources could be impacted if proposed activities altered fish and other marine species populations and habitat to such an extent that tribes could no longer sustain treaty fisheries. Furthermore, tribal elders traditionally teach their children and grandchildren to fish in traditional use areas where they were taught by their ancestors.

The changes in tribal access to U&A fishing ground and stations could be impacted if loss of income, revenue, employment, or cultural knowledge is lost.

Analyses in the Draft EIS/OEIS Sections 3.4 (Marine Mammals), 3.8 (Marine Invertebrates), and 3.9 (Fish) conclude that impacts on marine species to the extent cited above from training and testing activities would not result in lost or diminished fishing opportunities because the proposed activities would not cause fish population levels to be reduced or displaced. Based on these conclusions, secondary impacts on American Indian protected tribal resources and other traditional resources would not occur.

No impacts on Native American protected tribal resources or other traditional resources would occur under Alternative 1 because inaccessibility to areas of co-use, such as usual and accustomed fishing areas, would be of short duration during training activities.

Impacts to American Indian Traditional Resources of affected tribes could occur under Alternative 1 due to short-term reduced access to usual and accustomed fishing grounds and stations in the Inland Waters of the NWTT Study Area.

3.11.1.2 Alternative 2 Changes to Accessibility Impacts

The Alternative 2 changes are identical to the Alternative 1 changes described above.

3.11.2 AMERICAN INDIAN AND ALASKA NATIVE TRADITIONAL RESOURCES SUMMARY

MSO activities could impact American Indian traditional resources and access to fishing grounds in the Inland Waters of the NWTT Study Area as identified in tribal treaties. The Navy has an active consultation process in place and will continue to consult on a government-to-government basis with potentially affected American Indian tribes regarding Navy activities that may have the potential to significantly affect protected tribal treaty rights and resources. This is a change from the Draft EIS/OEIS, where no impact to American Indian protected tribal resources or other traditional resources was expected under any alternative.

REFERENCES CITED

- Roberts, C. M., J. A. Bohnsack, F. Gell, J. P. Hawkins, and R. Goodridge. 2001. Effects of Marine Reserves on Adjacent Fisheries. Pages 1920-1923. Vol. 294. Science, Science Magazine.
- Washington Department of Fish and Wildlife and the Northwest Indian Fisheries Commission. (2014). 2014-15 Co-Managers' List of Agreed Fisheries (May 1, 2014-April 30, 2015). Available on line at: <http://wdfw.wa.gov/fishing/tribal/2014-15agreement.pdf> as accessed June 20, 2014.

3.12 SOCIOECONOMIC RESOURCES

The modifications to the Proposed Action for activities occurring in the Offshore Area portion of the Study Area include increased overflights for the HARM Exercise (Non-firing). The same flight safety protocols described in the Draft EIS/OEIS would apply and no additional impact to public safety would occur. The analysis in the Draft EIS/OEIS does not need to be supplemented. The modifications to the Proposed Action do not alter the type or intensity of any other stressors for activities in the Offshore Area or Western Behm Canal portions of the Study Area so these activities are not analyzed below.

As described previously in Section 3.0 (Changes to Section 3.0.5 [Overall Approach to Analysis]) of this Supplement to the Draft EIS/OEIS, MSO activities increase the overall level of vessel movements analyzed, some of which result in Hood Canal bridge closures within Puget Sound, potentially impacting access (the public's ability to access areas used for recreational or economic purposes). Because this activity is proposed only for Alternative 1 and Alternative 2, only those two alternatives will be discussed for potential changes to the Draft EIS/OEIS.

A new section has been added to the Draft EIS/OEIS to describe current vehicle traffic in the vicinity of the Inland Waters portion of the Study Area:

3.12.2.1.3 Vehicle Traffic

3.12.2.1.3.1 Inland Waters

The only portion of the Study Area with vehicular traffic that could be impacted is in the Inland Waters—specifically, State Route 104. It is located on the west side of Puget Sound in northern Jefferson and Kitsap Counties. The route extends across the Hood Canal Floating Bridge, a drawbridge with two 300-ft spans that can open to allow marine traffic to pass. During openings, vehicular traffic on State Route 104 queues and back-ups occur. During 2010, there were 335 bridge openings and 17,000 vehicles are estimated to cross the bridge daily (WSDOT 2011).

Traffic is held at the traffic control gates located on the bridge during openings for commercial or recreational vessels, etc. These openings last for up to 30 minutes (WSDOT 2014), though clearance of the traffic queue will take longer. Notification to the public is made in advance via the Washington State Department of Transportation website and via a notification board on approaching highways. Some bridge openings associated with Navy training activities are longer, up to 60 minutes. Traffic is held off the bridge (in advance) using a physical barrier imposed by Washington State Patrol Troopers including canine teams. Traffic control gates at the end of the bridge are also employed. Traffic can queue for up to 4 miles on either side, depending on the time of day. These longer bridge openings also receive notice via a notification board on approaching highways; however, the lead-time is much less for national security reasons.

3.12.1 CHANGES TO ACCESSIBILITY IMPACTS

Section 3.12.3.1 (Accessibility) of the Draft EIS/OEIS has been changed. Prior to the discussion of the No Action Alternative, the following paragraphs have been added to describe the MSO and how that activity may impact bridge closures and accessibility:

The category of MSO includes several different components. One component of MSO is TPS. Each TPS event includes up to nine security vessels moving within Puget Sound and the Strait of Juan de Fuca. USCG personnel and their ancillary equipment and weapons systems are involved in these events. Generally, the escorts establish a moving perimeter (security zone) around the vessel to prevent other

vessels from entering that security zone. Depending on the type of vessel escort being conducted and other conditions, the security zone could be from a 100-yard to a 1,000-yard radius around the escorted vessel. Other vessels might be ordered to move. Every two years, a training event occurs which involves up to 16 vessels, transiting from Hood Canal to Admiralty Inlet. During this biennial event, boat crews train to engage surface targets by firing small-caliber (blank) weapons.

Similar maritime security escort training occurs with CRG boat crews conducting force protection for designated vessels and movements. Using up to four vessels per event, these CRG boat crews train to protect ships while entering and leaving ports. Other missions include ensuring compliance with vessel security zones for ships in port and at anchor, conducting patrols to counter waterborne threats, and conducting harbor approach defense. The CRG training events would not result in Hood Canal bridge openings.

NTMs are issued in advance of TPS events only on a case-by-case basis due to national security reasons. If present, all other vessels would be required to exit the security zone in accordance with general regulations in 33 C.F.R. Section 165, Subpart D. Along the route between the homeport and the dive/surface point, recreational or commercial vessels would be required to move outside the security zone of the designated Navy vessel, where conditions permit. Most often, this would mean relocating to a point closer to the shoreline. The impact to other vessels would typically last no more than 15 minutes, until the transiting vessels have passed.

During TPS events, both draw spans of the Hood Canal Bridge would be required for openings. Vehicular traffic on State Route 104 (which includes the Hood Canal Bridge) queues and back-ups occur. Normal bridge openings last for a range from 30–60 minutes (Washington State Department Of Transportation 2014), including TPS events which could be longer due to the number of escort vessels and the speeds necessary to navigate safely through the corridor. The duration of these openings could be in the upper part of the range, potentially leading to longer traffic queues. Advanced notice of bridge openings is limited for national security reasons and transits could occur any time of day and any day of the week. The Washington Department of Transportation has a website notification that the public can sign up for.

3.12.1.1 Alternative 1 Changes to Accessibility Impacts

Alternative 1 of the Draft EIS/OEIS has been revised to reflect the increased activities that could lead to reduced accessibility. The Inland Waters subsection of Section 3.12.3.1.2.1 (Training) contains the analysis and conclusions for Alternative 1 regarding Maritime Security Operations and is included below in its entirety:

Inland Waters

Security zone closures imposed during MSO events would be short-term and transitory, but could impact a variety of users. During these events, commercial and recreational vessels would need to provide a larger clearance for a longer time compared to occasions when they would simply need to provide passage for through-traffic. As described above, some vessels may be required to relocate as the transiting convoy approaches. Smaller, more maneuverable boats can easily relocate out of the path of the security zone, potentially burning more fuel than otherwise necessary. However, larger, less maneuverable boats would require more time and fuel to reposition. At full throttle, the average four-stroke gasoline engine burns about a half pound² of fuel per hour for each unit of horsepower (diesel

² Gasoline weighs about 6 pounds per gallon and diesel fuel 7 pounds per gallon.

burns about 0.4 pounds per hour per unit of horsepower) (Boating Magazine 2000). Assuming fuel prices of \$4.30 per gallon (diesel averages \$3.85) (NWBOATINFO.COM 2014), and assuming a vessel with 185-horsepower vessel expends 92 pounds of gasoline over the course of an hour, it would cost about \$65 and an hour of time (\$41 for diesel). This is an overestimate because it is based on the vessel being at full throttle; vessels waiting for the safety zone to pass would likely idle or cut their engines, thereby reducing fuel consumption. The impacts would be considered localized because only those vessels in the path of the security zone at the time of transit would be impacted.

Additional fuel costs to commercial shipping would occur if these ships had to hold in place as the safety zone passed, rather than following behind the safety zone or moving laterally along the shipping channel to accommodate the safety zone. Once the shipping channels narrow, tugboats maneuver large commercial shipping vessels to port. In this instance, fuel consumption costs of the larger commercial ship are minor.

Once the TPS vessels become part of the standard shipping traffic lanes, they interact with all other vessels in accordance with standard maritime rules. Ferry traffic is typically crossing vessel traffic service traffic lanes and therefore must yield to vessels in those traffic lanes, in accordance with maritime rules.

Vehicular traffic on State Route 104 (which includes the Hood Canal Bridge) queues for longer periods than normal bridge openings due to the number of escort vessels and the slow speeds necessary to navigate safely through the corridor. This leads to longer traffic queues. Because advanced notice is limited for security reasons, vehicles and vessels may be less able to choose to avoid the area during these events. Under Alternative 1, approximately 100 annual bridge openings would continue to occur. This is an average of approximately two bridge openings per week. In 2010, there were 335 bridge openings on State Route 104 over Hood Canal, approximately 100 of which were for TPS events; Alternative 1 proposes to maintain this level of bridge openings associated with these events. Of these 100 events, it is estimated that 60 will require a 60-minute opening and the remaining will require 40-minutes openings, based on the training scenario. Depending on the timing of the openings, traffic queues on State Route 104 could be heavily impacted as rush-hour queues have been estimated to reach several miles (Heath 2011).

While Alternative 1 would adjust the location and frequency of some training activities, the Navy would continue to implement strict standard operating procedures. Despite the increase in frequency of training activities, anticipated impacts on transportation and shipping, commercial and recreational fishing, or tourism would be minor because inaccessibility to areas of co-use would be infrequent and of short duration (hours). Based on the Navy's standard operating procedures (Chapter 5, Standard Operating Procedures, Mitigation, and Monitoring) and the large expanse area, accessibility impacts would be minor. No disproportionately high or adverse effects on any low-income populations or minority populations would occur as a result of implementation of these activities.

3.12.1.2 Alternative 2 Changes to Accessibility Impacts

The Alternative 2 changes are identical to the Alternative 1 changes described above.

3.12.2 SOCIOECONOMIC RESOURCES SUMMARY

MSO events impact vehicle traffic as well as vessel traffic in Puget Sound. The Proposed Action does not include any changes to the tempo or intensity of these on-going activities, so no additional impacts are expected.

REFERENCES CITED

Heath and Associates, Inc. 2011. Fred Hill Materials Central Conveyor and Pier Traffic Impact Analysis. Jefferson County, WA.

Washington State Department of Transportation. (2014). SR 104- Hood Canal Bridge - Draw Span. Retrieved from www.wsdot.wa.gov/Projects/SR104HoodCanalBridgeEast/Progress/ as accessed on 2014, August 20.

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4 CUMULATIVE IMPACTS

4.1 AIR QUALITY

As detailed in Section 3.2 (Air Quality), increased training and testing activities conducted under Alternatives 1 and 2 would result in increased criteria pollutant emissions and hazardous air pollutant emissions throughout the Study Area. Sources of the increased emissions would include vessels and aircraft, and to a lesser extent munitions. Potential impacts include localized and temporarily elevated pollutant concentrations. Recovery would occur quickly as emissions disperse, and there would be no significant impact on air quality. The impacts of Alternatives 1 or 2 would be cumulative with other actions that involve criteria air pollutant and hazardous air pollutant emissions. However, the incremental contribution of Alternatives 1 or 2 to cumulative impacts would be low for the following reasons:

- All of the air emissions sources proposed in this Environmental Impact Statement (EIS)/Overseas EIS (OEIS) are mobile sources and do not impact the current attainment status.
- Few stationary offshore air pollutant emission sources exist within the Study Area and few are expected in the foreseeable future.
- International regulations by the International Maritime Organization require commercial shipping vessels to switch to lower-sulfur fuel near United States (U.S.) and international coasts beginning in 2012 (National Oceanic and Atmospheric Administration 2011a). The Department of Defense (DoD) has released the Operational Energy Strategy: Implementation Plan which will reduce demand, diversify energy sources, and integrate energy consideration into planning (U.S. Department of Defense 2012). The U.S. Department of the Navy (Navy) policy commits to a reduction of oil consumption by 50 percent by 2015, 40 percent of the Navy's total energy will come from fossil fuel alternatives and 50 percent of its onshore energy will come from renewable sources by 2020 (Environmental and Energy Study Institute 2009; Paige 2009). Similar low-sulfur fuel regulations in California, including a voluntary state slowdown policy, were found to reduce several pollutants, including sulfur dioxide and particulate matter by as much as 90 percent (Lack et al. 2011).

Based on the analysis presented in Section 3.2 (Air Quality) and the reasons summarized above, the incremental contribution of Alternatives 1 or 2 to cumulative impacts would be low and would still be below applicable state, federal, and U.S. Environmental Protection Agency standards and guidelines. Therefore, further analysis of cumulative impacts on air quality is not warranted.

4.2 CLIMATE CHANGE

Section 4.4.4.2 (Cumulative Greenhouse Gas Impacts) of the Draft EIS/OEIS describes the impacts that the air emissions related to training and testing will have on greenhouse gases. In that section, Table 4.4-1 compares the greenhouse gas emissions of the proposed action to 2010 U.S. greenhouse gas emissions. Table 4.4-1 is reproduced below as Table 4-1. Because of the air emissions resulting from the Maritime Security Operations and the High-Speed Anti-Radiation Missile (HARM) Exercise (see Section 3.2 [Air Quality] of this Supplement to the Draft EIS/OEIS), Table 4.4-1 has been revised. The revised numbers are shown in Table 4-1. Even though emissions from the Proposed Action increase significantly, as a result of modifications to the activities, the contribution to the total remains insignificant.

Table 4-1: Comparison of Ship and Aircraft Greenhouse Gas Emissions to United States 2010 Greenhouse Gas Emissions; Extracted from Table 4.4-1 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Alternative	Annual Greenhouse Gas Emissions (teragrams CO ₂ Eq)	NWTT Emissions as a Percentage of U.S. 2010 Greenhouse Gas Emissions
NWTT No Action Alternative	0.05 0.107	0.0007 0.0016
NWTT Alternative 1	0.05 0.154	0.0007 0.0023
NWTT Alternative 2	0.06 0.157	0.0009 0.0023
U.S. 2010 Greenhouse Gas Emissions	6,821.8	

Notes: CO₂ Eq = carbon dioxide equivalent, U.S. = United States

Source: U.S. Environmental Protection Agency 2012

4.3 MARINE MAMMALS

4.3.1 IMPACTS OF ALTERNATIVES 1 AND 2 THAT MAY CONTRIBUTE TO CUMULATIVE IMPACTS

Based on the analysis presented in Section 3.4 (Marine Mammals), impacts of Alternatives 1 and 2 that might contribute to cumulative impacts on marine mammals include injury (Level A harassment under the Marine Mammal Protection Act [MMPA]) and disturbance or behavioral modification (MMPA Level B harassment). Injury could be caused by underwater explosions, or in the form of Potential Threshold Shift (PTS) could also be caused by sonar use. Underwater explosions and sonar use would result in disturbance that meets the definition of MMPA Level A and B harassment. Other relatively short-term activities that might inadvertently harass marine mammals meet the definition of MMPA Incidental Harassment Authorizations. The remaining stressors analyzed in Section 3.4 (Marine Mammals) are not expected to result in mortality or Level A or B harassment.

4.3.2 IMPACTS OF OTHER ACTIONS

The potential impacts of other actions that are relevant to the cumulative impact analysis for marine mammals include the following:

- Mortality associated with non-Navy vessel strikes, bycatch in fisheries, and entanglement in fishing and other gear
- Injury associated with non-Navy vessel strikes, bycatch, entanglement, and underwater sound
- Disturbance, behavioral modifications, and reduced animal fitness associated with underwater noise
- Reduced animal fitness associated with water pollution

Most of the other actions and considerations would include operation of marine vessels. Exceptions include the actions listed under environmental regulations and permitting. Stressors associated with marine vessel operations that are of primary concern for the cumulative impacts analysis includes vessel strikes and underwater noise. Many of the actions would also result in underwater noise from sources other than vessels, seismic surveys, and construction activities. Rather than discussing these stressors for individual actions, their aggregate impacts are considered below as “other environmental considerations” in the maritime traffic and ocean noise subsections. Similarly, many of the actions would result in water pollution. The aggregate impacts of water pollution are addressed in the ocean pollution section (Section 4.4.6.2.5) of the Draft EIS/OEIS. Bycatch is associated with commercial fishing, and the

primary cause of entanglement is commercial fishing. Therefore, these stressors are discussed in the commercial fishing section (Section 4.4.6.3.1).

4.3.3 CUMULATIVE IMPACTS ON MARINE MAMMALS

The aggregate impacts of past, present actions and reasonably foreseeable future actions of all users in the Study Area are expected to result in significant impacts on some marine mammal species in the Study Area. The impacts are considered significant because vessel strikes, bycatch, and entanglement associated with other actions are expected to result in relatively high rates of injury and mortality that could cause population declines in some species. Alternatives 1 and 2 could also result in injury to individuals of some marine mammal species from underwater explosions, sonar, and vessel strikes. Injury that might occur under Alternatives 1 and 2 would be additive to injury and mortality associated with other actions. However, the relative contribution of the Proposed Action to the overall injury and mortality would be low compared to other actions. The Navy does not anticipate mortalities to marine mammals within the Study Area as a result of training or testing activities under any of the alternatives. While quantitative estimates of marine mammal mortality from other actions are not available, the total bycatch estimate (lethal takes and serious injuries) for marine mammals for 39 fisheries and 54 marine mammal stocks throughout the United States was 1,887 individual animals in 2005 (National Oceanic and Atmospheric Administration 2011b). Some of these mortalities likely occurred in the Study Area or affected individuals that used the Study Area seasonally.

Ocean noise associated with other actions (see Section 4.4.6.2.4, Ocean Noise) and acoustic stressors (underwater explosions and sonar) associated with Alternatives 1 and 2 could also result in additive behavioral impacts on marine mammals. Other future actions such as pier construction would be expected to result in MMPA Level B harassment. However in the Offshore Area, it is unlikely that these actions and underwater explosions or sonar use would overlap in time and space because these activities are dispersed and the sound sources are intermittent. Training and testing activities in the Hood Canal may overlap with previously discussed construction events, such as the Explosive Handling Wharf-2 construction activities. The noise from these activities could combine with training and testing events to make impacts more intense, or cause additive impacts over time to the marine mammals in the area. However, most of these other actions are not compatible with or could interfere with training and testing activities that involve underwater explosions and sonar use. The Navy takes appropriate coordination and scheduling steps (described in Section 3.12, Socioeconomic Resources) to avoid activities that interfere with or are not compatible with training and testing.

It is likely that distant shipping noise, which is more universal and continuous, and sound associated with underwater explosions and sonar would overlap in time and space. However, there is no evidence indicating that the co-occurrence of shipping noise and sounds associated with underwater explosions and sonar use would result in harmful additive impacts on marine mammals.

As discussed in Section 4.4.6.2.5 (Ocean Pollution), the potential also exists for the impacts of ocean pollution and acoustic stressors associated with Alternatives 1 and 2 to be additive or synergistic. It is possible that the response of a previously stressed animal would be more severe than the response of an unstressed animal.

In summary, based on the analysis presented in Section 3.4 (Marine Mammals), the current aggregate impacts of past and present actions and reasonably foreseeable future actions are expected to result in significant impacts on some marine mammal species in the Study Area. Therefore, cumulative impacts on marine mammals would be significant without consideration of the impacts of Alternatives 1 or 2.

Alternatives 1 and 2 would contribute to and increase cumulative impacts, but the relative contribution would be low compared to other actions. Further analysis of cumulative impacts on marine mammals is not warranted.

4.4 SEA TURTLES

4.4.1 IMPACTS OF ALTERNATIVES 1 AND 2 THAT MAY CONTRIBUTE TO CUMULATIVE IMPACTS

Impacts of Alternatives 1 and 2 that might contribute to cumulative impacts on sea turtles include mortality, injury, and short-term disturbance or behavioral modification. Mortality or injury could be caused by underwater explosions or vessel strikes. Injury, in the form of PTS, could also be caused by sonar use. Noninjurious impacts of underwater explosions and sonar use would include short-term disturbance or behavioral modification. The Navy's Annual Model-Predicted Impacts on Leatherback Sea Turtles (*Dermochelys coriacea*) from Explosions for Training and Testing Activities under the No Action Alternative, Alternative 1, and Alternative 2 are presented in the Draft EIS/OEIS and are predicted to be zero for Temporary Threshold Shift (TTS), PTS, Gastrointestinal Tract Injury, Slight Lung Injury, and Mortality. Leatherback sea turtles (*Dermochelys coriacea*) are found in the Study Area while other species of sea turtle were found to be extralimital species to the Study Area. Therefore the Leatherback sea turtle would be more likely to be affected, but is still not likely to be adversely affected, by the remaining stressors analyzed in the Draft EIS/OEIS. The incremental contribution of these remaining stressors to cumulative impacts on sea turtles would be negligible. Therefore, these stressors are not considered further in the cumulative impacts analysis.

4.4.2 IMPACTS OF OTHER ACTIONS

The potential impacts of other actions by other users of the Study Area that are relevant to the cumulative impact analysis for sea turtles include the following:

- Mortality associated with vessel strikes, bycatch in fisheries, entanglement, and stressors associated with coastal development and human use of coastal environments (e.g., beach vehicular driving, power plant entrainment [sea turtles being caught in power plant outflow water], etc.)
- Injury associated with vessel strikes, bycatch, entanglement, and underwater sound
- Disturbance, behavioral modifications, and reduced animal fitness associated with underwater noise
- Reduced animal fitness associated with ocean pollution
- Habitat loss related to coastal development

Except for actions listed under environmental regulations and planning, most of the other actions and considerations retained for analysis in the Draft EIS/OEIS involve the operation of marine vessels. Exceptions include the actions. Stressors associated with marine vessel operations that are of primary concern for the cumulative impacts analysis includes vessel strikes and underwater noise. Many of the actions would also result in underwater noise from sources other than vessels. Rather than discussing these stressors for individual actions, their aggregate impacts are considered below as "other environmental considerations" in maritime traffic and ocean noise. Similarly, many of the actions would result in ocean pollution. Bycatch is associated with commercial fishing, and the primary cause of entanglement is commercial fishing.

4.4.2.1 Cumulative Impacts on Sea Turtles

The current aggregate impacts of past, present and reasonably foreseeable future actions may have a significant effect, but are not likely to adversely affect sea turtles. These aggregate impacts are considered significant because bycatch, vessel strikes, entanglement and other stressors associated with other actions may result in high rates of injury and mortality that could cause population declines to ESA-listed species, such as the leatherback sea turtle (*Dermochelys coriacea*), or inhibit species recovery. Alternatives 1 and 2 could also result in injury and mortality to individual sea turtles from underwater explosions, sonar, and vessel strikes. Injury and mortality that might occur under Alternatives 1 and 2 would be additive to injury and mortality associated with other actions. However, the relative contribution of Alternatives 1 and 2 to the overall injury and mortality would be low compared to other actions.

Ocean noise associated with other actions and acoustic stressors (underwater explosions and sonar) associated with Alternatives 1 and 2 could also result in additive behavioral impacts on sea turtles. Other future actions such as operation of wave and tidal energy facilities would be expected to result in similar impacts. However, it is unlikely that these actions and underwater explosions or sonar use would overlap in time and space because all of these activities are widespread and the sound sources are intermittent. Furthermore, most of these other actions are not compatible with or could interfere with training and testing activities that involve underwater explosions and sonar use. The Navy takes appropriate steps to avoid activities that interfere with or are not compatible with training and testing.

It is likely that distant shipping noise (which is more pervasive and continuous) and sound associated with underwater explosions and sonar would overlap in time and space. However, there is no evidence indicating that the co-occurrence of shipping noise and sounds associated with underwater explosions and sonar use would result in harmful additive impacts on sea turtles.

The potential also exists for the impacts of ocean pollution and acoustic stressors associated with Alternatives 1 and 2 to be additive or synergistic. It is possible that the response of a previously stressed animal would be more severe than the response of an unstressed animal. However, there are no data indicating that a sea turtle affected by ocean pollution would be more susceptible to stressors associated with Alternatives 1 and 2.

In summary, based upon the analysis in Section 3.5 (Sea Turtles) of the Draft EIS/OEIS, the current aggregate impacts of past, present and reasonably foreseeable future actions may have a significant effect, but are not likely to adversely affect sea turtles. Therefore, cumulative impacts on sea turtles would be significant without consideration of the impacts of Alternatives 1 and 2. Alternatives 1 and 2 would contribute to and increase cumulative impacts, but the relative contribution would be low compared to other actions. Further analysis of cumulative impacts on sea turtles is not warranted.

4.5 CUMULATIVE IMPACTS TO AMERICAN INDIAN AND ALASKA NATIVE TRADITIONAL RESOURCES

Section 4.4.13 (American Indian and Alaska Native Traditional Resources) of the Draft EIS/OEIS describes the contribution that the Navy's activities may have on cumulative impacts to American Indian and Alaska Native traditional resources. This section has been revised and is reproduced below. *Note that all references to tables or sections refer to the Draft EIS/OEIS.*

4.4.13.1 Impacts of Alternatives 1 and 2 That May Contribute to Cumulative Impacts

As discussed in Section 3.11 (American Indian and Alaska Native Traditional Resources), Alternatives 1 and 2 could result in impacts on American Indian protected tribal resources and other traditional resources, because inaccessibility to areas of co-use such as usual and accustomed fishing grounds, even of short duration, may prevent fishing for a limited time. As described in the Draft EIS/OEIS, stressors that could impact American Indian and Alaska Native Traditional resources include accessibility, airborne acoustics, vessel and in-water device strikes, deposition of military expended materials, and changes to the availability of marine resources. Impacts on American Indian protected tribal resources would occur under Alternative 1, and Alternative 2, because of in-water device strikes and the inaccessibility to areas of co-use, such as usual and accustomed fishing grounds and stations, even if they are of short duration, during training activities.

As described in the Draft EIS/OEIS, the Navy has established protective measures to reduce potential effects on cultural and natural resources from training and testing activities. While most of these protective measures focus on protection of the natural environment, they also benefit culturally valued natural resources, such as salmon and shellfish. Some of the protective measures include avoidance of known submerged obstructions, use of inert ordnance and passive tracking and acoustical tools, and avoidance of sensitive habitats to ensure that significant concentrations of sea life are not present.

The Navy also would strive to maintain safety and accommodate, to the extent possible, access to tribes' usual and accustomed fishing grounds and stations. The Navy provides the U.S. Coast Guard with information on the locations of potentially hazardous training or testing activities at sea so they can issue Notices to Mariners. In some instances, the Navy has directly notified affected American Indian tribes and nations to ensure that their activities in usual and accustomed fishing grounds and stations can avoid any potentially hazardous training or testing locations at sea. The changes in tribal access to usual and accustomed fishing grounds and stations could be impacted if income, revenue, employment, or cultural knowledge is lost.

4.4.13.2 Impacts of Other Actions

With a few exceptions, most of the other actions retained for cumulative impacts analysis (see Table 4.3-1) would involve some form of disturbance to the ocean bottom. Exceptions include environmental regulations and planning actions, ocean pollution, and most forms of ocean noise. Actions that would disturb the ocean bottom could impact submerged American Indian and Alaska Native Traditional resources. For example, ocean bottom disturbance would occur from construction-related activities such as ship anchoring and installation of wind turbine piers. Any physical disturbance on the continental shelf and ocean floor (including the Inland Waters and the Western Behm Canal) could inadvertently damage or destroy submerged fishing gear, or areas of traditional or cultural significance.

The other actions that result in ocean bottom disturbance require some form of federal authorization or permitting. Therefore, requirements of the National Historic Preservation Act (NHPA) apply to actions in territorial waters. Federal agency procedures have been implemented to identify American Indian and Alaska Native Traditional resources, avoid impacts, and mitigate if impacts cannot be avoided. For example, traditional resources along with archaeological and architectural resources are protected by various laws and their implementing regulations: the NHPA of 1966 as amended in 2006, the American Indian Religious Freedom Act of 1978, and the Native American Graves Protection and Repatriation Act of 1990. Within state territorial waters (0–3 nautical miles [nm]), the NHPA is the guiding mandate;

within U.S. territorial waters (0–12 nm), the National Environmental Policy Act (NEPA) is the primary mandate. Areas beyond 12 nm in the open ocean are beyond the jurisdiction of NEPA. Nonetheless, inadvertent impacts could occur if unidentified submerged tribal or traditional resources are present.

4.4.13.3 Cumulative Impacts on American Indian and Alaska Native Traditional Resources

The success of American Indian tribal fisheries has been impacted by long-term changes in the environment which have reduced fish stocks due to impacted water quality, reduced habitat—especially spawning habitat for salmon runs, and increased commercial harvests. The Navy has an active consultation process in place and will continue to consult on a government-to-government basis with potentially affected American Indian tribes regarding Navy activities that may have the potential to significantly affect protected tribal treaty rights and resources. The Navy's other measures to prevent pollution from its own operations and sustain or improve habitat value help to offset some of the cumulative impacts.

4.6 SOCIOECONOMICS

The analysis in Section 3.12 (Socioeconomic Resources) indicates that the impacts of Alternatives 1 and 2 on socioeconomic resources would be negligible. Alternatives 1 and 2 are not expected to contribute to cumulative socioeconomic impacts. Therefore, further analysis of cumulative impacts on socioeconomic resources is not warranted.

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5 STANDARD OPERATING PROCEDURES, MITIGATION, AND MONITORING

The Navy is updating Chapter 5 of the Draft EIS/OEIS. Only the sections identified below in this Supplement to the Draft EIS/OEIS are being revised. All other sections in the Draft EIS/OEIS remain valid.

5.3.1 LOOKOUT PROCEDURAL MEASURES

5.3.1.2.2.1 Improved Extended Echo Ranging Sonobuoys

Section 5.3.1.2.2.1 (Improved Extended Echo Ranging Sonobuoys) of the Draft Environmental Impact Statement (EIS)/Overseas EIS (OEIS) describes the Lookout mitigation measures proposed during Improved Extended Echo Ranging (IEER) training and testing activities. As a result of changes to the Tracking Exercise (TRACKEX) – Maritime Patrol (Extended Echo Ranging Sonobuoys) activity, the United States (U.S) Department of the Navy (Navy) no longer proposes to conduct training using IEER sonobuoys, so the mitigation measures described in this section have been revised. The description of the mitigation measures was described in the Draft EIS/OEIS under the “Training” heading, while the “Testing” section said that the testing measures were consistent with the training measures. Since the Navy is no longer proposing to train using IEER sonobuoys, it is no longer appropriate to describe mitigation measures under “Training.” Therefore, the following section has been revised to state that the Navy’s Proposed Action does not include IEER sonobuoys, and the description of the mitigation measures previously under “Training” in the Draft EIS/OEIS are now moved under “Testing.” The revised section is included below in its entirety:

Training

The Navy’s Proposed Action does not include the use of IEER Sonobuoys.

Testing

The Navy is proposing to continue the Lookout procedural measures currently implemented for this activity and to clarify that one Lookout is required:

- Crews shall conduct visual reconnaissance of the drop area prior to laying their intended sonobuoy pattern. This search shall be conducted at an altitude below 1,500 feet (ft.) (460 meters [m]) at a slow speed, if operationally feasible and weather conditions permit. In dual aircraft operations, crews are allowed to conduct area clearances utilizing more than one aircraft.
- Crews shall conduct a minimum of 30 minutes of visual and aural monitoring of the search area prior to commanding the first post detonation. This 30-minute observation period may include pattern deployment time.
- When operationally feasible, Navy crews shall conduct continuous visual and aural monitoring of marine mammal activity. This shall include monitoring of aircraft sensors from the time of the first sensor placement until the aircraft have left the area and are out of range of these sensors.
- Aural Detection – If the presence of marine mammals is detected aurally, then that shall cue the Navy aircrew to increase the vigilance of their visual surveillance. Subsequently, if no marine mammals are visually detected, then the crew may continue multi-static active search.
- Mammal monitoring shall continue until out of own-aircraft sensor range.

5.3.1.2.2.2 Explosive Signal Underwater Sound Buoys Using 0.6–2.5 Pound Net Explosive Weight

In this section and elsewhere in Chapter 5 where the description of a net explosive weight is given as “0.6-2.5 pound,” the range is revised to “>0.5-2.5 pound.” This change ensures that all weights greater than 0.5 pound are included in these mitigation measures. The changes to this section include the section heading and two sentences included below:

Lookout measures do not currently exist for explosive Signal Underwater Sound (SUS) buoy exercises using >0.5–2.5 pound (lb.) net explosive weight.

Aircraft conducting explosive sonobuoy exercises using >0.5–2.5 lb. net explosive weight will have one Lookout.

5.3.1.2.2.3 Mine Countermeasure and Neutralization Activities Using Positive Control Firing Devices

In this section of the Draft EIS/OEIS, the description of Lookout procedures during training activities was updated to make the following changes: (1) revision of the net explosive weight from “0.6-2.5 pound” to “>0.5-2.5 pound” as described above in 5.3.1.2.2.2., (2) a proposed new mitigation zone of 400 yd. (366 m), and (3) a reduction in the number of required lookouts from four to two.

These changes are reflected in the following:

The Navy is proposing to continue using the Lookout procedures currently implemented for mine neutralization activities involving positive control diver placed charges from >0.5-2.5 lb. net explosive weight. The Navy is proposing a new mitigation zone of 400 yd. (366 m) for >0.5-2.5 lb. net explosive weight detonations based on the smaller charge sizes used in NWTT training activities.

The Navy is also proposing that activities using a >0.5-2.5 lb. net explosive weight (Bin E3) detonation will have a total of two Lookouts (one Lookout positioned in each of two support vessels). All divers placing the charges on mines will support the Lookouts while performing their regular duties. The divers and Lookouts will report all marine mammal, sea turtle, and marbled murrelet sightings to their dive support vessel.

5.3.1.2.2.4 Mine Neutralization Activities Using Diver-Placed Time-Delay Firing Devices

Section 5.3.1.2.2.4 (Mine Neutralization Activities Using Diver-Placed Time-Delay Firing Devices) is now deleted. The Navy no longer plans to use time-delay firing devices. All mine neutralization activities will use positive control firing devices as described in Section 5.3.1.2.2.3 above.

5.3.1.2.2.8 Torpedo (Explosive) Testing

In this section of the Draft EIS/OEIS, the Navy is updating the Lookout procedures for Testing to clarify that aircraft Lookouts will be used if low-altitude aircraft are present, whether the torpedo was released from an aircraft or from a ship. The change is reflected in the following sentence:

For explosive torpedo tests with low-altitude aircraft present, the Navy will have one Lookout positioned in an aircraft.

5.3.2 MITIGATION ZONE PROCEDURAL MEASURES

The Navy is updating Table 5.3-2 from the Draft EIS/OEIS. The applicable sections of Table 5.3-2 are reproduced below as Table 5-1.

5.3.2.1.1.1 Low-Frequency and Hull-Mounted Mid-Frequency Active Sonar

In this section of the Draft EIS/OEIS, the Navy is updating the final paragraph under Training to explain why the mitigations zone for pinnipeds is different than that for other marine mammals. Also, a paragraph describing the recommended mitigation measures under Testing is revised to change the mitigation zone from 1,000 yd. to 200 yd. The revised paragraphs are included below:

For pinnipeds, the Navy proposes a 100 yd. mitigation zone. The pinniped mitigation zone does not apply for pierside testing in the vicinity of pinnipeds hauled out on man-made structures and vessels. Within Puget Sound there are several locations where pinnipeds use Navy structures (e.g., submarines, security barriers) for haulouts in spite of the degree of activity surrounding these sites. Given that animals continue to choose these areas for their resting behavior, it would appear there are no long-term effects or consequences to those animals as a result of ongoing and routine Navy activities.

Activities that involve the use of low-frequency active sonar (including pierside) will use Lookouts for visual observation immediately before and during the event. If a cetacean or sea turtle (pinniped measures are described below) is sighted within 200 yd. (180 m) of the sound source, active transmissions will cease. Active transmission will recommence if any one of the following conditions is met: (1) the animal is observed exiting the mitigation zone, (2) the animal is thought to have exited the mitigation zone based on its course and speed, (3) the mitigation zone has been clear from any additional sightings for a period of 30 minutes, or (4) the sound source has transited more than 2,000 yd. (1.8 km) beyond the location of the last sighting.

5.3.2.1.2.1 Improved Extended Echo Ranging Sonobuoys

In Section 5.3.2.1.2.1 (Improved Extended Echo Ranging Sonobuoys) of the Draft EIS/OEIS describes mitigation zone procedural measures proposed during IEER training and testing activities. As a result of changes to the TRACKEX – Maritime Patrol (Extended Echo Ranging Sonobuoys) activity, the Navy no longer proposes to conduct training using IEER sonobuoys, so the mitigation measures described in this section have been revised. The revised section is included below in its entirety:

Training

The Navy's Proposed Action does not include the use of IEER Sonobuoys.

Testing

The Navy is proposing to (1) modify the mitigation measures currently implemented for this activity by reducing the marine mammal and sea turtle mitigation zone from 1,000 yards (yd.) (920 m) to 600 yd. (550 m), (2) clarify the conditions needed to recommence an activity after a sighting, and (3) adopt the marine mammal and sea turtle mitigation zone size for floating vegetation for ease of implementation. The recommended measures are provided below.

Mitigation will include pre-testing aerial observation and passive acoustic monitoring, which will begin 30 minutes before the first source/receiver pair detonation and continue throughout the duration of the test. The pre-testing aerial observation will include the time it takes to deploy the sonobuoy pattern (deployment is conducted by aircraft dropping sonobuoys in the water). IEER sonobuoys will not be

Table 5-1: Predicted Range to Effects and Recommended Mitigation Zones; Extracted from Table 5.3-2 in the Draft EIS/OEIS and Updated to Reflect Changes in Mitigation Measures

Activity Category	Representative Source (Bin) ¹	Predicted Average Range to TTS	Predicted Average Range to PTS	Predicted Maximum Range to PTS	Recommended Mitigation Zone
Sonar and Other Active Acoustic Sources					
Low-Frequency and Hull-Mounted Mid-Frequency Active Sonar	SQS-53 ASW hull-mounted sonar (MF1)	4,251 yd. (3,887 m)	281 yd. (257 m)	< 292 yd. (< 267 m)	<u>Training:</u> 1,000 yd. (920 m) and 500 yd. (460 m) power downs and 200 yd. (180 m) shutdown for cetaceans and sea turtles, 100 yd. (90 m) mitigation zone for pinnipeds <u>Testing:</u> 1,000 yd. (920 m) and 500 yd. (460 m) power downs for sources that can be powered down and 200 yd. (180 m) shutdown for cetaceans, 100 yd. (90 m) for pinnipeds
Explosive and Impulse Sound					
Improved Extended Echo Ranging Sonobuoys	Explosive sonobuoy (E4)	237 yd. (217 m)	133 yd. (122 m)	235 yd. (215 m)	<u>Training:</u> 600 yd. (550 m) n/a <u>Testing:</u> 600 yd. (550 m)
Signal Underwater Sound (SUS) buoys using 0.6-2.5 lb. NEW	Explosive sonobuoy (E3)	178 yd. (163 m)	92 yd. (84 m)	214 yd. (196 m)	<u>Training:</u> 350 yd. (320 m) <u>Testing:</u> 350 yd. (320 m)
Mine Countermeasure and Neutralization Activities (Time delay and positive control)	Up to 2.5 lb NEW (E3)	495 yd. (453 m)	145 yd. (133 m)	373 yd. (341 m)	<u>Training:</u> 700 400 yd. (640 366 m) <u>Testing:</u> n/a

¹ This table does not provide an inclusive list of source bins; bins presented here represent the source bin with the largest range to effects within the given activity category.

² High-frequency and non-hull-mounted mid-frequency active sonar category includes unmanned underwater vehicle and torpedo testing activities.

³ The representative source bin E5 has different range to effects depending on the depth of activity occurrence (at the surface or at various depths).

Notes: ASW = anti-submarine warfare, in. = inch, km = kilometer, m = meter, mm = millimeter, n/a = Not Applicable, NEW = net explosive weight, PTS = permanent threshold shift, TTS = temporary threshold shift, yd. = yard

deployed if concentrations of floating vegetation (kelp paddies) are observed in the mitigation zone around the intended deployment location. Explosive detonations will cease if a marine mammal or sea turtle is sighted within the mitigation zone. Detonations will recommence if any one of the following conditions is met: (1) the animal is observed exiting the mitigation zone, (2) the animal is thought to have exited the mitigation zone based on its course and speed, or (3) the mitigation zone has been clear from any additional sightings for a period of 30 minutes.

Passive acoustic monitoring would be conducted with Navy assets, such as sonobuoys, already participating in the activity. These assets would only detect vocalizing marine mammals within the frequency bands monitored by Navy personnel. Passive acoustic detections would provide only limited range and bearing to detected animals, and therefore cannot provide locations of these animals. Passive acoustic detections would be reported to Lookouts posted in aircraft and on vessels in order to increase vigilance of their visual surveillance.

5.3.2.1.2.3 Mine Countermeasure and Neutralization Activities Using Positive Control Firing Devices

Mitigation zone procedural measures for this training activity are changed to reflect the removal of time-delay firing devices, the updated lower limit of the net explosive weight range, and the updated mitigation zone size from 700 yards to 400 yards. The affected paragraphs are included below:

Mine countermeasure and neutralization activities in the Study Area involve the use of diver-placed charges that typically occur close to shore. When these activities are conducted using a positive control firing device, the detonation is controlled by the personnel conducting the activity and is not authorized until the area is clear at the time of detonation.

Currently, the Navy employs the following mitigation zone procedures during mine countermeasure and neutralization activities using positive control firing devices:

- Mitigation Zone – All Mine Warfare and Mine Countermeasures Operations involving the use of explosive charges must include mitigation zones for marine mammals and marbled murrelets to prevent physical and/or acoustic effects to those species.
 - The exclusion zone for marine mammals shall extend in a 700 yd. (640 m) arc radius around the detonation site for all charge sizes from >0.5-2.5 lb. net explosive weight.

For activities involving positive control diver-placed charges, the Navy is proposing to (1) modify the currently implemented mitigation measures for activities involving from >0.5-2.5 lb. net explosive weight by changing the mitigation zone from 700 yds. (640 m) to 400 yd. (366 m), (2) clarify the conditions needed to recommence an activity after a sighting, and (3) add a requirement to observe for floating vegetation. The recommended measures for activities involving positive control diver-placed activities are provided below.

The Navy is proposing to use the 400 yd. (366 m) mitigation zones for marine mammals described above during activities involving positive control diver-placed charges. The Navy is also proposing to continue to use the net explosive weight-dependent marbled murrelet mitigation zones described above. Visual observation will be conducted by two small boats, each with a minimum of two surveyors.

5.3.2.1.2.4 Mine Neutralization Activities Using Diver-Placed Time-Delay Firing Devices

Section 5.3.2.1.2.4 (Mine Neutralization Activities Using Diver-Placed Time-Delay Firing Devices) is now deleted. The Navy no longer plans to use time-delay firing devices. All mine neutralization activities will use positive control firing devices as described in Section 5.3.2.1.2.3 above.

5.3.2.2.1.1 Vessels

Mitigation zone procedural measures for this activity are changed to describe exceptions to how mitigation measures are applied to testing activities involving the retrieval of a test body. The additional information is added to the final paragraph under the Testing section and is included below:

The Navy is proposing to incorporate the training mitigation measures described above during testing activities involving surface ships, and for all other testing activities to continue using the mitigation measures currently implemented, revised to exclude pinnipeds during test body retrieval and to include the exception for bow-riding dolphins as described above under Training. During test body retrieval, the activity cannot be relocated away from marine mammals active in the area, or significantly delayed without risking loss of the test body, so the activity must proceed even if pinnipeds are present in the immediate vicinity. However, the retrieval vessel is a range craft and risks to marine mammals are very low.

5.3.2.2.1.2 Towed In-Water Devices

Mitigation zone procedural measures for testing activities are changed to describe how Lookouts are employed during tests in which in-water devices are towed by unmanned platforms. The revised description is included below:

Testing

The Navy's proposed mitigation measures for testing activities from manned platforms are consistent with Navy training mitigation measures described above. During testing in which in-water devices are towed by unmanned platforms, a manned escort vessel will be included and one Lookout will be employed.

5.4 MITIGATION SUMMARY

The Navy is updating Table 5.4-1 from the Draft EIS/OEIS, to reflect the changes described above. The applicable sections of Table 5.4-1 are reproduced below as Table 5-2.

Table 5-2: Summary of Recommended Mitigation Measures; Extracted from Table 5.4-1 in the Draft EIS/OEIS and Updated to Reflect Changes in Mitigation Measures

Activity Category or Mitigation Area	Recommended Lookout Procedural Measure	Recommended Mitigation Zone and Protection Focus	Current Measure and Protection Focus
Acoustic Stressors – Sonar and Other Active Acoustic Sources			
Low-Frequency and Hull-Mounted Mid-Frequency Active Sonar during Anti-Submarine Warfare and Mine Warfare	<u>Training:</u> 2 Lookouts (general), 1 Lookout (minimally manned, moored, or anchored) <u>Testing:</u> 2 Lookouts (general), 1 Lookout (small boats, minimally manned, moored, anchored, pierside, or shore-based)	<u>Training:</u> 1,000 yd. (920 m) and 500 yd. (460 m) power downs and 200 yd. (180 m) shutdown for cetaceans and sea turtles (excludes bow-riding dolphins), 100 yd. (90 m) mitigation zone for pinnipeds (excludes haulouts). <u>Testing:</u> Cetacean mitigation zone 1,000 yd. (920 m), 100 yd. (90 m) for pinnipeds (excludes haulouts), from intended track of the test unit. 1,000 yd. (920 m) and 500 yd. (460 m) power downs for sources that can be powered down and 200 yd. (180 m) shutdown for cetaceans, 100 yd. (90 m) for pinnipeds	<u>Training:</u> 1,000 yd. (920 m) and 500 yd. (460 m) power downs and 200 yd. (180 m) shutdown for marine mammals and sea turtles. <u>Testing:</u> Observation conducted from all participating surface craft and, where available, adjacent shore sites, with a cetacean mitigation zone 1,000 yd. (920 m), 100 yd. (90 m) for pinnipeds from intended track of the test unit.
Explosive and Impulse Sound			
Improved Extended Echo Ranging Sonobuoys	<u>Training:</u> 1 Lookout <u>Testing:</u> 1 Lookout	<u>Training:</u> 600 yd. (550 m) for marine mammals, sea turtles, and concentrations of floating vegetation. n/a <u>Testing:</u> Same as Training 600 yd. (550 m) for marine mammals, sea turtles, and concentrations of floating vegetation.	<u>Training:</u> 1,000 yd. (920 m) for marine mammals and sea turtles. <u>Testing:</u> Same as Training
Explosive Signal Underwater Sound buoys using 0.6 >0.5 –2.5 lb. NEW	<u>Training:</u> 1 Lookout <u>Testing:</u> 1 Lookout	<u>Training:</u> 350 yd. (320 m) for marine mammals, sea turtles, and concentrations of floating vegetation. <u>Testing:</u> Same as Training	None

Table 5-2: Summary of Recommended Mitigation Measures; Extracted from Table 5.4-1 in the Draft EIS/OEIS and Updated to Reflect Changes in Mitigation Measures (continued)

Activity Category or Mitigation Area	Recommended Lookout Procedural Measure	Recommended Mitigation Zone and Protection Focus	Current Measure and Protection Focus
Explosive and Impulse Sound (continued)			
Mine Countermeasures and Mine Neutralization using Positive Control Firing Devices	<u>Training:</u> 2 Lookouts (1 each on 2 survey boats) <u>Testing:</u> n/a	<u>Training:</u> 700 yd. (640 m) 400 yd. (366 m) for >0.5-2.5 lb. charge for marine mammals, turtles, and marbled murrelet. 330 yd. (300 m) for up to 1.5 lb. charge for marbled murrelet. 110 yd. (100 m) for 1 ounce charge marbled murrelet. <u>Testing:</u> n/a	<u>Training:</u> 700 yd. (640 m) for up to 2.5 lb. charge for marine mammals, turtles, and marbled murrelet. 330 yd. (300 m) for up to 1.5 lb. charge for marbled murrelet. 110 yd. (100 m) for 1 ounce charge marbled murrelet. <u>Testing:</u> n/a
Mine Neutralization Activities Using Diver Placed Time-Delay Firing Devices	<u>Training:</u> 4 Lookouts (2 each on 2 survey boats) <u>Testing:</u> n/a	<u>Training:</u> 700 yd. (640 m) for up to 2.5 lb. charge for marine mammals, turtles, and marbled murrelet. 330 yd. (300 m) for up to 1.5 lb. charge for marbled murrelet. 110 yd. (100 m) for 1 ounce charge marbled murrelet. <u>Testing:</u> n/a	<u>Training:</u> 700 yd. (640 m) for up to 2.5 lb. charge for marine mammals, turtles, and marbled murrelet. 330 yd. (300 m) for up to 1.5 lb. charge for marbled murrelet. 110 yd. (100 m) for 1 ounce charge marbled murrelet. <u>Testing:</u> n/a

6 ADDITIONAL REGULATORY CONSIDERATIONS

In the Draft Environmental Impact Statement (EIS)/Overseas EIS (OEIS), Chapter 6 (Additional Regulatory Considerations) summarizes environmental compliance for the Proposed Action; consistency with other federal, state, and local plans, policies, and regulations; the relationship between short-term use of the environment and maintenance and enhancement of long-term productivity in the affected environment; irreversible or irretrievable commitments of resources; and energy requirements and conservation. The changes to the Proposed Action have no effect on any of these sections of this chapter, except for energy requirements and conservation.

Section 6.4 (Energy Requirements and Conservation Potential of Alternatives and Mitigation Measures) of the Draft EIS/OEIS includes a sentence that provides an estimate of the increased fuel use by the Navy for Alternative 1 and Alternative 2, when compared to the No Action Alternative. In the Draft EIS/OEIS, the estimated increase is written as “0.5 million gallons per year” for both Alternative 1 and Alternative 2. Because of the increased vessel operations and fuel burn associated with the Maritime Security Operations, this text has been revised to “5.0 million gallons per year.”

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APPENDIX A NAVY ACTIVITIES DESCRIPTIONS

The descriptions included in Appendix A are intended to provide a better understanding of each training and testing activity commonly conducted by naval forces. In Section A.1.2 (Anti-Surface Warfare Training) of the Draft Environmental Impact Statement (EIS)/Oversea EIS (OEIS), the Navy provides descriptions of activities categorized as “Anti-Surface Warfare Training.” The activity description for Gunnery Exercise Surface-to-Surface (Boat) has been removed since that activity is now included with Maritime Security Operations. The description of the new training activity “High-Speed Anti-Radiation Missile (HARM) Exercise (Non-firing)” has been added to this category and is included below:

A.1.2.4 High-Speed Anti-Radiation Missile (HARM) Exercise (Non-firing)

Activity Name	Activity Description	
Anti-Surface Warfare		
High-speed Anti-Radiation Missile (HARM) Exercise (Non-firing)	Short Description: Fixed-wing aircrews simulate firing HARM missiles, using captive air training missiles against surface targets. All missile firings are simulated; no actual missiles are fired.	
Long Description	A HARM Exercise is an integral part of EA-6B and EA-18G squadron training. It trains aircrews to conduct electronic attack using the HARM missile, which is the primary weapon used against threat radars, including air defense systems. Only non-firing HARMs are used during HARM Exercises in the Offshore Area of the NWTT Study Area. During a typical HARM Exercise, an EA-6B or EA-18G flying at a high altitude (> 10,000 feet [ft.] above ground level) would receive and identify an electronic signal from a simulated enemy radar. The aircrew would then position themselves for the optimum firing solution and simulate firing a HARM missile at the electronic signal. HARM Exercises are non-firing events that typically last 1–2 hours. The aircrew uses sensors, usually radar, to locate a surface target. The crew then simulates the firing of an actual missile by using a non-firing captive air training missile that has been loaded on the aircraft.	
Information Typical to the Event	Platform: Fixed-wing aircraft (e.g., EA-6B, EA-18G) Systems: Radar, electronic surveillance, Captive Air Training Missile Ordnance/Munitions: None Targets: None Duration: 2 hours	Location: Offshore Area
Potential Impact Concerns (Information regarding deconstruct categories and stressors)	Acoustic: Aircraft noise Energy: None Physical Disturbance and Strike: Aircraft strike (seabirds only) Entanglement: None Ingestion: None	
Detailed Military Expended Materials Information	None	
Assumptions Used for Analysis	All events are non-firing. Aircraft remain above 10,000 ft. for the entire event.	

In Section A.1.7 (Other Training) of the Draft EIS/OEIS, the Navy provides descriptions of training activities categorized as “Other Training.” As a result of the addition of the new training activity, a description has been added in Appendix A to Section A.1.7 (Other Training) of the EIS/OEIS for Maritime Security Operations. That description is included below:

A.1.7.1 Maritime Security Operations

Activity Name	Activity Description	
Other		
Maritime Security Operations	Surface ship crews conduct a suite of Maritime Security Operations (MSO) events including maritime security escorts for Navy vessels such as Fleet Ballistic Missile Submarines (SSBNs); Visit, Board, Search, and Seizure; Maritime Interdiction Operations; Force Protection; and Anti-Piracy Operations.	
Long Description	<p>Maritime security operations in the Northwest Training and Testing (NWTT) study area are predominantly maritime security escort events, including the Transit Protection System (TPS) and training of other escort units.</p> <p>The TPS includes up to 9 security vessels that protect SSBNs while moving within Puget Sound and the Strait of Juan de Fuca. U.S. Coast Guard (USCG) personnel and their ancillary equipment and weapons systems are involved in these events. Generally, the escorts establish a moving 1000-yard perimeter (security zone) around the vessel to prevent non-participants from entering that security zone. Non-participant vessels might be ordered to move. Every two years, a training event occurs which involves up to 16 vessels, transiting from Hood Canal to Admiralty Inlet. During this biennial event, boat crews train to engage surface targets by firing small-caliber (blank) weapons.</p> <p>Similar maritime security escort training occurs with Coastal Riverine Group (CRG) boats that conduct force protection for designated vessels and movements. These CRG boat crews train to protect ships while entering and leaving ports. Other missions include ensuring compliance with vessel security zones for ships in port and at anchor, conducting patrols to counter waterborne threats, and conducting harbor approach defense.</p> <p>The vessels used during TPS activities and CRG training include: small unit riverine craft, combat rubber raiding craft, rigid-hull inflatable boats, patrol craft, reaction vessels, blocking vessels and many other versions of these types of boats. These boats use inboard or outboard, diesel or gasoline engines with either propeller or water jet propulsion. Boat crews may use high or low speeds to approach and engage targets simulating other boats, swimmers, floating mines, or nearshore land targets with small-caliber (blank) weapons.</p>	
Information Typical to the Event	<p>Platform: Small boats (16 to 64 feet [ft.]), reaction vessels (87 ft.), blocking vessels (250 ft.), and patrol boats (34 to 85 ft.)</p> <p>Systems: None</p> <p>Ordnance/Munitions: Small-caliber side arms, 7.62 caliber, 50 caliber, and 25 millimeter weapons (all blanks).</p> <p>Targets: High-performance small boats, recoverable or expendable floating target</p> <p>Duration: For TPS, averaging 10 hours, up to approximately 12–18 hours; 2 hour for other MSO activities</p>	<p>Location:</p> <p>Inland Waters, including Naval Base (NAVBASE) Kitsap Bangor, NAVBASE Kitsap Bremerton, Naval Station Everett, Hood Canal, Dabob Bay, Puget Sound, Strait of Juan de Fuca</p>
Potential Impact Concerns (Information regarding deconstruct categories and stressors)	<p>Acoustic: Airborne noise from small arms fire, in-water vessel noise</p> <p>Energy: None</p> <p>Physical Disturbance and Strike: Vessel strike, in-water device strike, military expended material strike (casings)</p> <p>Entanglement: None</p> <p>Ingestion: Casings</p>	

<i>Detailed Military Expended Material Information</i>	None
<i>Assumptions Used for Analysis</i>	<p>Maritime security operations is a broad term used to describe activities used to train naval forces in the skills necessary to protect naval vessels during transit and from small boat attack, perform counter piracy and drug operations (maritime interdiction operations and visit, board, search, and seizure), and protect key infrastructure. As a category, maritime security operations broadly covers training events naval forces need to be able to tailor to respond to emergent threats. Maritime security events conducted in inland waters do not involve live fire of weapons. All maritime security events involve vessel movement, sometimes at speeds necessary to overtake suspect vessel and/or small boats (targets). Maritime security training events, particularly maritime security escorts, are conducted proximate to NAVBASEs Kitsap Bangor, Bremerton, and Everett, and within the Hood Canal, Dabob Bay, Puget Sound, and Strait of Juan de Fuca. Other maritime security operations events could occur in the Offshore Area.</p> <p>Maritime Security Escort (SSBN Transit Protection): The Transit Protection System utilizes a mixture of 16 security vessels, up to 9 of which can be utilized at any time for escorting SSBNs transiting between the SSBN homeport of NAVBASE Bangor and the dive/surface point in the Strait of Juan de Fuca or Dabob Bay.</p> <p>Transit Protection vessels are equipped with conventional weapons systems to provide protection during all SSBN transits. The Transit Protection System also utilizes USCG personnel and their ancillary equipment and weapons systems.</p> <p>TPS vessels include 16 escort security boats home ported at NAVBASE Kitsap Bangor, consisting of 2 Blocking Vessels, 2 Reaction Vessels, and 12 Screening Vessels.</p> <p>Specifics regarding how the escort activity would be performed, which boats would be used, how and when they would be deployed, type of armament, number of personnel assigned to each escort vessel, and specific capabilities of TPS are classified or fall under Department of Defense Controlled Nuclear Information guidelines and, thus, are not included here.</p> <p>Generally, the escorts would establish and maintain a moving perimeter security zone perimeter around the SSBN to prevent other vessels and personnel from entering the security zone. Depending on the type of vessel escort being conducted and other conditions, the security zone could be from a 100-yard to a 1,000-yard radius around the escorted vessel. Recreational and commercial vessels might be ordered to move.</p> <p>While the number and timing of TPS events would vary, it is estimated they would occur 225 times per year; 100 annual events with 9 escort vessels and 125 events with 7 escort vessels. Additionally there would be 1 biennial certification event with all 16 vessels transiting from Hood Canal to Admiralty Inlet, firing blank rounds. To the extent practicable, all use of blank ammunition would be near the center of the waterway and no closer than 500 yards to the shoreline.</p> <p>The TPS escorts help deter a terrorist threat to an SSBN, minimize the possibility of an accidental collision between recreational or commercial vessels and an SSBN, and fulfill mandated security directives and policies.</p> <p>USCG crews on all TPS vessels would employ standard marine mammal strike avoidance protocols.</p> <p>All shell casings associated with use of blank ammunition shall be captured, to the greatest extent feasible, using either cofferdams around guns, capture bins, or capture on the deck of vessels.</p> <p>Radio broadcasts to mariners will be conducted during exercises to ensure the public is aware and clear of the area.</p>

	<p>Maritime Security Escort (Coastal Riverine Group): Naval Coastal Riverine Units train to provide escort and force protection security to naval vessels.</p> <p>These training events will be conducted within inland waterways in and around Naval Homeports such as Naval Base Kitsap Bangor, Naval Base Kitsap Bremerton, and Naval Station Everett, and within the Hood Canal, Dabob Bay, Puget Sound, and Strait of Juan de Fuca WA.</p> <p>These training events would occur approximately 60 times per year, approximately 60-70% originating proximate to Bangor, 20-30% proximate to Bremerton, and the remainder (less than 10%) proximate to Everett. The average total transit distance associated with maritime security escort training events (Other) can vary between 50 and 180 nautical miles.</p> <p>Maritime Security Escort (Other) is supported with 6 total vessels (i.e., 34' Sea Ark Patrol Craft and 85' Mk VI Riverine Craft), of which 2-4 vessels would be used for a single escort mission.</p> <p>Naval Coastal Riverine Forces would also conduct certification maritime security escort training events once every 6-9 months. These certification events would include 8-10 days underway, operating in common escort areas (with 1-2 days of no-fire events/7 days of blank fire events in the vicinity of Whidbey Island). The typical training day would consist of two shifts, approximately 5 hours each. Nighttime training is not anticipated. Certification training would utilize up to 5 boats (3 as escorts, 1 simulating a Navy vessel to be protected, and 1 simulating Opposition Force [OPFOR]). The underway drills will focus on maritime security escorts, navigation, and basic seamanship evolutions to include mooring, towing, and anchoring. Some evolutions may require speed surges/short-term acceleration for proper force protection stationing. Training in weapons handling, firing of blank ammunition, and the use of pyrotechnics and non-lethal deterrents will also be conducted.</p> <p>Routine Proficiency Training would occur 1-2 days a week, where the skills discussed above would be practiced as operational schedules allow to maintain readiness.</p> <p>Special consideration will be given with regard to the presence of marine mammals during training events. Training will be paused until marine mammals have cleared the area, or the training area will be temporarily relocated. Expended Brass: Efforts will be made by crews to collect all expended brass captured on the deck; however, brass ejection may result in loss over the side. Use of Pyrotechnics limited to flash, flare, and sound devices, may be utilized for escalation of force training and/or execution in accordance with NTTP 3-20.6.29M governing tactical boat operations. Noise Levels: Loud hailers will be used for hailing contacts if no radio communication can be established. Use of sirens in support of mission or training will be minimized and period of use limited to late-morning through early evening. Water Depth: Patrol boats will not typically be operating in shoal water. Unless in an emergency and during launch and recovery, patrol boats will only operate in waters in which the charted depth is greater than 6 feet. Speed: Patrol boats are not expected to exceed 15 knots unless involved in a drill that requires them to quickly move from one zone to another to provide force protection. Anchoring: Crews will study the charts and Coast Guard notices to evaluate the bottom type and find an area to anchor that will not impact any type of marine life or plants. Refueling Operations: When refueling, pier side or on a trailer, crews will use the required checklist to refuel and will have the spill kit ready in case of any spills. When refueling an absorbing pad will be on the fuel tank inlet as well as the vent.</p>
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APPENDIX F TRAINING AND TESTING ACTIVITIES MATRICES

In the Draft Environmental Impact Statement (EIS)/Overseas EIS (OEIS), Appendix F contains tables that help to describe each of the training and testing activities in terms of their component parts and the stressors associated with each activity. As a result of the addition of the High-Speed Anti-Radiation Missile Exercise (Non-firing) and Maritime Security Operations training activities, two of the tables (Table F-1 and Table F-3) have been revised here in the Supplement to the Draft EIS/OEIS. The remaining information in the Draft EIS/OEIS remains current. The applicable portions of Table F-1 and Table F-3 are reproduced on page F-3.

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Table F-1: Components of Training Activities; Extracted from Table F-1 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Training Activity	Electromagnetic Devices	Aircraft Carriers	Surface Combatants	Amphibious Warfare Ships	Support Craft	Submarines	Towed Devices	Unmanned Surface or Underwater Vehicles	Non-Explosive Small-Caliber Projectiles	Non-Explosive Medium-Caliber Projectiles	Non-Explosive Large-Caliber Projectiles	Non-Explosive Bombs	Non-Explosive Missiles	Non-Explosive Torpedoes	Aircraft Stores or Ballast	Non-Explosive Rockets	Non-Explosive Sonobuoys	Parachutes	Chaff	Flares	High-Explosive Munitions	Targets	Seafloor Devices	Fixed-Wing Aircraft	Rotary-Wing Aircraft	Unmanned Aircraft Systems	Fiber Optic Wire	Guidance Wire
ANTI-SURFACE WARFARE (ASUW)																												
High-Speed Anti-Radiation Missile (HARM) Exercise (Non-firing)																								✓				
OTHER TRAINING EXERCISES																												
Maritime Security Operations			✓		✓	✓			✓																			
Small Boat Attack					✓				Note 1	Note 1																		
Intelligence, Surveillance, Reconnaissance (ISR)																								✓				
Search and Rescue																									✓			

Note 1: "Blank" rounds only

Table F-3: Stressors by Training Activity; Extracted from Table F-3 in the Draft EIS/OEIS and Updated to Reflect Changes in the Proposed Action

Northwest Training Activity	Biological Resources															Physical Resources						Human Resources								
	Acoustic Stressors							Energy Stressors		Physical Stressors			Entanglement Stressors		Ingestion Stressors	Air Quality Stressors		Sediments and Water Quality Stressors				Acoustics ¹	Physical Disturbance ¹	Accessibility ²	Airborne Acoustics ²	Physical Disturbance and Strikes ²	Underwater Energy ³	In-Air Energy ³	Physical Interactions ³	
	Tactical Acoustic Sonar	Other Acoustic Devices	Underwater Explosions	In-air Explosions	Weapons Firing Noise	Aircraft Noise	Vessel and Simulated Vessel Noise	Electromagnetic	Lasers	Aircraft and Aerial Target Strikes	Vessel and In-water Device Strikes	Military Expended Materials	Seafloor Devices	Cables and Wires	Parachutes	Military Expended Materials	Criteria Air Pollutants	Hazardous Air Pollutants	Explosives	Metals	Chemicals									Other Materials
ANTI-SURFACE WARFARE (ASUW)																														
High-Speed Anti-Radiation Missile (HARM) Exercise (Non-firing)						✓				✓							✓	✓								✓				
OTHER TRAINING EXERCISES																														
Maritime Security Operations					✓		✓				✓	✓				✓	✓		✓					✓	✓	✓	✓			✓
Small Boat Attack					✓		✓									✓	✓	✓		✓										
Intelligence, Surveillance, Reconnaissance						✓				✓							✓	✓								✓				
Search and Rescue						✓				✓							✓	✓								✓				

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